

## SEQUENCE LISTING

<110> Bodian, Dale  
Daouti, Sherif  
Kumar, Chandrika  
Latario, Brian  
Quintavalla, Joseph

JC20 RefSeq

2003-04-18

<120> High throughput functional genomic  
screening methods for osteoarthritis

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<150> 60/463,933

<151> 2003-04-18

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Ile	Leu	Gly	Thr	Lys	Lys	Lys	Tyr	Phe	Ser	Thr	Cys	Lys	Asn	Trp	Tyr	
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Lys	Lys	Ser	Ile	Cys	Gly	Gln	Lys	Thr	Thr	Val	Leu	Tyr	Glu	Cys	Cys	
65				70						75					80	
Pro	Gly	Tyr	Met	Arg	Met	Glu	Gly	Met	Lys	Gly	Cys	Pro	Ala	Val	Leu	
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Gly	Leu	Phe	Ile	Asn	His	Tyr	Pro	Asn	Gly	Val	Val	Thr	Val	Asn	Cys	
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Ala	Arg	Ile	Ile	His	Gly	Asn	Gln	Ile	Ala	Thr	Asn	Gly	Val	Val	His	
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Val	Ile	Asp	Arg	Val	Leu	Thr	Gln	Ile	Gly	Thr	Ser	Ile	Gln	Asp	Phe	
225				230						235					240	
Ile	Glu	Ala	Glu	Asp	Leu	Ser	Ser	Phe	Arg	Ala	Ala	Ala	Ile	Thr		
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Phe	Glu	Thr	Leu	Glu	Gly	Asn	Thr	Ile	Glu	Ile	Gly	Cys	Asp	Gly	Asp	
			325						330					335		
Ser	Ile	Thr	Val	Asn	Gly	Ile	Lys	Met	Val	Asn	Lys	Lys	Asp	Ile	Val	
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Thr	Asn	Asn	Gly	Val	Ile	His	Leu	Ile	Asp	Gln	Val	Leu	Ile	Pro	Asp	
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Ser	Ala	Lys	Gln	Val	Ile	Glu	Leu	Ala	Gly	Lys	Gln	Gln	Thr	Thr	Phe	
	370					375					380					
Thr	Asp	Leu	Val	Ala	Gln	Leu	Gly	Leu	Ala	Ser	Ala	Leu	Arg	Pro	Asp	
385				390						395					400	
Gly	Glu	Tyr	Thr	Leu	Leu	Ala	Pro	Val	Asn	Asn	Ala	Phe	Ser	Asp	Asp	
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Thr	Leu	Ser	Met	Val	Gln	Arg	Leu	Leu	Lys	Leu	Ile	Leu	Gln	Asn	His	
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Leu	Glu	Thr	Ile	Gly	Gly	Lys	Gln	Leu	Arg	Val	Phe	Val	Tyr	Arg	Thr	
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Ala	Val	Cys	Ile	Glu	Asn	Ser	Cys	Met	Glu	Lys	Gly	Ser	Lys	Gln	Gly	
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Arg	Asn	Gly	Ala	Ile	His	Ile	Phe	Arg	Glu	Ile	Ile	Lys	Pro	Ala	Glu	
			485						490					495		
Lys	Ser	Leu	His	Glu	Lys	Leu	Lys	Gln	Asp	Lys	Arg	Phe	Ser	Thr	Phe	
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Leu	Ser	Leu	Leu	Glu	Ala	Ala	Asp	Leu	Lys	Glu	Leu	Leu	Thr	Gln	Pro	
		515					520					525				
Gly	Asp	Trp	Thr	Leu	Phe	Val	Pro	Thr	Asn	Asp	Ala	Phe	Lys	Gly	Met	
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Thr	Ser	Glu	Glu	Lys	Glu	Ile	Leu	Ile	Arg	Asp	Lys	Asn	Ala	Leu	Gln	

## 33178SEQLIST.TXT

545 Asn Ile Ile Leu Tyr 550 His Leu Thr Pro Gly 555 Val Phe Ile Gly Lys 560 Gly  
 Phe Glu Pro Gly Val 565 Thr Asn Ile Leu Lys 570 Thr Thr Gln Gly Ser Lys  
 Ile Phe Leu Lys Glu Val 580 Asn Asp Thr Leu Leu Val 590 Asn Glu Leu Lys  
 Ser Lys Glu Ser Asp Ile Met Thr Thr Asn Gly Val 600 Ile His Val Val  
 Asp Lys Leu Leu Tyr Pro 615 Ala Asp Thr Pro Val 620 Gly Asn Asp Gln Leu  
 625 Leu Glu Ile Leu Asn Lys Leu Ile Lys Tyr 635 Ile Gln Ile Lys Phe Val  
 Arg Gly Ser Thr Phe Lys Glu Ile Pro Val Thr Val Tyr Thr Thr Lys  
 Ile Ile Thr Lys Val Val Glu Pro 665 Lys Ile Lys Val Ile Glu Gly Ser  
 Leu Gln Pro Ile Ile Lys Thr Glu Gly Pro Thr Leu Thr Lys Val Lys  
 Ile Glu Gly Glu Pro Glu Phe Arg Leu Ile Lys Glu Gly Glu Thr Ile  
 705 Thr Glu Val Ile His Gly Glu Pro Ile Ile Lys Lys Tyr Thr Lys Ile  
 Ile Asp Gly Val Pro Val Glu Ile Thr Glu Lys Glu Thr Arg Glu Glu  
 Arg Ile Ile Thr Gly Pro Glu Ile Lys Tyr Thr Arg Ile Ser Thr Gly  
 Gly Gly Glu Thr Glu Glu Thr Leu Lys Lys Leu Leu Gln Glu Glu Val  
 Thr Lys Val Thr Lys Phe Ile Glu Gly Gly Asp Gly His Leu Phe Glu  
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 Gly Arg Ser Gln 825 830 835

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 <213> homo sapiens

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 Gly Gln Glu Asn Gly His Val Lys Val Asn Gly Asp Ala Ser Pro Ala  
 20 35 40 45  
 Ala Ala Glu Ser Gly Ala Lys Glu Glu Leu Gln Ala Asn Gly Ser Ala  
 50 55 60  
 Pro Ala Ala Asp Lys Glu Glu Pro Ala Ala Ala Gly Ser Gly Ala Ala  
 65 70 75 80  
 Ser Pro Ser Ser Ala Glu Lys Gly Glu Pro Ala Ala Ala Ala Pro  
 85 90 95  
 Glu Ala Gly Ala Ser Pro Val Glu Lys Glu Ala Pro Ala Glu Gly Glu  
 100 105 110  
 Ala Ala Glu Pro Gly Ser Ala Thr Ala Ala Glu Gly Glu Ala Ala Ser  
 115 120 125  
 Ala Ala Ser Ser Thr Ser Ser Pro Lys Ala Glu Asp Gly Ala Thr Pro  
 130 135 140  
 Ser Pro Ser Asn Glu Thr Pro Lys Lys Lys Lys Arg Phe Ser Phe  
 145 150 155 160  
 Lys Lys Ser Phe Lys Leu Ser Gly Phe Ser Phe Lys Lys Asn Lys Lys  
 165 170 175  
 Glu Ala Gly Glu Gly Gly Glu Ala Glu Ala Pro Ala Ala Glu Gly Gly

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180  
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 Ala Ala Ser Gly Glu Gln Ala Ala Ala Pro Gly Glu Glu Ala Ala Ala  
 210 215 220  
 Gly Glu Glu Gly Ala Ala Gly Gly Asp Pro Gln Glu Ala Lys Pro Gln  
 225 230 235 240  
 Glu Ala Ala Val Ala Pro Gly Lys Pro Pro Ala Ser Asp Glu Thr Lys  
 245 250 255  
 Ala Ala Glu Glu Pro Ser Lys Val Glu Glu Lys Lys Ala Glu Glu Ala  
 260 265 270  
 Gly Ala Ser Ala Ala Ala Cys Glu Ala Pro Ser Ala Ala Gly Pro Gly  
 275 280 285  
 Ala Pro Pro Glu Gln Glu Ala Ala Pro Ala Glu Glu Pro Ala Ala Ala  
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 Leu Lys Ala Cys Phe Ser Gly Leu Thr Gln Thr Glu Trp Gln His Arg  
 35 40 45  
 His Thr Ala Gln Ser Ile Glu Thr Gln Ser Thr Ser Glu Glu Leu  
 50 55 60  
 Val Pro Ser Pro Pro Ser Pro Leu Pro Pro Pro Arg Val Tyr Lys Pro  
 65 70 75 80  
 Cys Phe Val Cys Gln Asp Lys Ser Ser Gly Tyr His Tyr Gly Val Ser  
 85 90 95  
 Ala Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ser Ile Gln Lys Asn  
 100 105 110  
 Met Ile Tyr Thr Cys His Arg Asp Lys Asn Cys Val Ile Asn Lys Val  
 115 120 125  
 Thr Arg Asn Arg Cys Gln Tyr Cys Arg Leu Gln Lys Cys Phe Glu Val  
 130 135 140  
 Gly Met Ser Lys Glu Ser Val Arg Asn Asp Arg Asn Lys Lys Lys Lys  
 145 150 155 160  
 Glu Thr Ser Lys Gln Glu Cys Thr Glu Ser Tyr Glu Met Thr Ala Glu  
 165 170 175  
 Leu Asp Asp Leu Thr Glu Lys Ile Arg Lys Ala His Gln Glu Thr Phe  
 180 185 190  
 Pro Ser Leu Cys Gln Leu Gly Lys Tyr Thr Thr Asn Ser Ser Ala Asp  
 195 200 205  
 His Arg Val Arg Leu Asp Leu Gly Leu Trp Asp Lys Phe Ser Glu Leu  
 210 215 220  
 Ala Thr Lys Cys Ile Ile Lys Ile Val Glu Phe Ala Lys Arg Leu Pro  
 225 230 235 240  
 Gly Phe Thr Gly Leu Thr Ile Ala Asp Gln Ile Thr Leu Leu Lys Ala  
 245 250 255  
 Ala Cys Leu Asp Ile Leu Ile Leu Arg Ile Cys Thr Arg Tyr Thr Pro  
 260 265 270  
 Glu Gln Asp Thr Met Thr Phe Ser Asp Gly Leu Thr Leu Asn Arg Thr  
 275 280 285  
 Gln Met His Asn Ala Gly Phe Gly Pro Leu Thr Asp Leu Val Phe Thr  
 290 295 300  
 Phe Ala Asn Gln Leu Leu Pro Leu Glu Met Asp Asp Thr Glu Thr Gly  
 305 310 315 320  
 Leu Leu Ser Ala Ile Cys Leu Ile Cys Gly Asp Arg Gln Asp Leu Glu

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Glu Pro Thr Lys Val Asp Lys Leu Gln Glu Pro Leu Leu Glu Ala Leu  
 325 330 335  
 340 345 350  
 Lys Ile Tyr Ile Arg Lys Arg Arg Pro Ser Lys Pro His Met Phe Pro  
 355 360 365  
 Lys Ile Leu Met Lys Ile Thr Asp Leu Arg Ser Ile Ser Ala Lys Gly  
 370 375 380  
 Ala Glu Arg Val Ile Thr Leu Lys Met Glu Ile Pro Gly Ser Met Pro  
 385 390 395 400  
 Pro Leu Ile Gln Glu Met Leu Glu Asn Ser Glu Gly His Glu Pro Leu  
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 Gly Met Ser Lys Glu Ser Val Arg Asn Asp Arg Asn Lys Lys Lys Lys  
 35 40 45  
 Glu Thr Ser Lys Gln Glu Cys Thr Glu Ser Tyr Glu Met Thr Ala Glu  
 50 55 60  
 Leu Asp Asp Leu Thr Glu Lys Ile Arg Lys Ala His Gln Glu Thr Phe  
 65 70 75 80  
 Pro Ser Leu Cys Gln Leu Gly Lys Tyr Thr Thr Asn Ser Ser Ala Asp  
 85 90 95  
 His Arg Val Arg Leu Asp Leu Gly Leu Trp Asp Lys Phe Ser Glu Leu  
 100 105 110  
 Ala Thr Lys Cys Ile Ile Lys Ile Val Glu Phe Ala Lys Arg Leu Pro  
 115 120 125  
 Gly Phe Thr Gly Leu Thr Ile Ala Asp Gln Ile Thr Leu Leu Lys Ala  
 130 135 140  
 Ala Cys Leu Asp Ile Leu Ile Leu Arg Ile Cys Thr Arg Tyr Thr Pro  
 145 150 155 160  
 Glu Gln Asp Thr Met Thr Phe Ser Asp Gly Leu Thr Leu Asn Arg Thr  
 165 170 175  
 Gln Met His Asn Ala Gly Phe Gly Pro Leu Thr Asp Leu Val Phe Thr  
 180 185 190  
 Phe Ala Asn Gln Leu Leu Pro Leu Glu Met Asp Asp Thr Glu Thr Gly  
 195 200 205  
 Leu Leu Ser Ala Ile Cys Leu Ile Cys Gly Asp Arg Gln Asp Leu Glu  
 210 215 220  
 Glu Pro Thr Lys Val Asp Lys Leu Gln Glu Pro Leu Leu Glu Ala Leu  
 225 230 235 240  
 Lys Ile Tyr Ile Arg Lys Arg Arg Pro Ser Lys Pro His Met Phe Pro  
 245 250 255  
 Lys Ile Leu Met Lys Ile Thr Asp Leu Arg Ser Ile Ser Ala Lys Gly  
 260 265 270  
 Ala Glu Arg Val Ile Thr Leu Lys Met Glu Ile Pro Gly Ser Met Pro  
 275 280 285  
 Pro Leu Ile Gln Glu Met Leu Glu Asn Ser Glu Gly His Glu Pro Leu  
 290 295 300  
 Thr Pro Ser Ser Ser Gly Asn Thr Ala Glu His Ser Pro Ser Ile Ser  
 305 310 315 320  
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<210> 27

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<211> 227  
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 <213> homo sapiens

<400> 27

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20      25      30
Glu Glu Gly Thr Pro Lys Glu Ser Glu Pro Gln Ala Ala Glu Pro
35      40      45
Ala Glu Ala Lys Glu Gly Lys Glu Lys Pro Asp Gln Asp Ala Glu Gly
50      55      60
Lys Ala Glu Glu Lys Glu Gly Glu Lys Asp Ala Ala Ala Lys Glu
65      70      75      80
Glu Ala Pro Lys Ala Glu Pro Glu Lys Thr Glu Gly Ala Ala Glu Ala
85      90      95
Lys Ala Glu Pro Pro Lys Ala Pro Glu Gln Glu Gln Ala Ala Pro Gly
100      105      110
Pro Ala Ala Gly Gly Glu Ala Pro Lys Ala Ala Glu Ala Ala Ala
115      120      125
Pro Ala Glu Ser Ala Ala Pro Ala Glu Glu Glu Pro Ser Lys Glu
130      135      140
Glu Gly Glu Pro Lys Lys Thr Glu Ala Pro Ala Ala Pro Ala Ala Gln
145      150      155      160
Glu Thr Lys Ser Asp Gly Ala Pro Ala Ser Asp Ser Lys Pro Gly Ser
165      170      175
Ser Glu Ala Ala Pro Ser Ser Lys Glu Thr Pro Ala Ala Thr Glu Ala
180      185      190
Pro Ser Ser Thr Pro Lys Ala Gln Gly Pro Ala Ala Ser Ala Glu Glu
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Pro Lys Pro Val Glu Ala Pro Ala Ala Asn Ser Asp Gln Thr Val Thr
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Val Lys Glu
225

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<210> 28  
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 <212> PRT  
 <213> homo sapiens

<400> 28

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20      25      30
Val Gly Leu Gly Ile Asn Pro Phe Ala Asp Gly Met Gly Ala Phe Lys
35      40      45
Leu Asn Pro Ser Ser His Glu Leu Ala Ser Ala Gly Gln Thr Ala Phe
50      55      60
Thr Ser Gln Ala Pro Gly Tyr Ala Ala Ala Ala Leu Gly His His
65      70      75      80
His His Pro Gly His Val Gly Ser Tyr Ser Ser Ala Ala Phe Asn Ser
85      90      95
Thr Arg Asp Phe Leu Phe Arg Asn Arg Gly Phe Gly Asp Ala Ala Ala
100      105      110
Ala Ala Ser Ala Gln His Ser Leu Phe Ala Ala Ser Ala Gly Gly Phe
115      120      125
Gly Gly Pro His Gly His Thr Asp Ala Ala Gly His Leu Leu Phe Pro
130      135      140
Gly Leu His Glu Gln Ala Gly His Ala Ser Pro Asn Val Val Asn
145      150      155      160
Gly Gln Met Arg Leu Gly Phe Ser Gly Asp Met Tyr Pro Arg Pro Glu
165      170      175
Gln Tyr Gly Gln Val Thr Ser Pro Arg Ser Glu His Tyr Ala Ala Pro
180      185      190
Gln Leu His Gly Tyr Gly Pro Met Asn Val Asn Met Ala Ala His His

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## 33178SEQLIST.TXT

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      195      200      205
Gly Ala Gly Ala Phe Phe Arg Tyr Met Arg Gln Pro Ile Lys Gln Glu
 210      215      220
Leu Ile Cys Lys Trp Ile Glu Pro Glu Gln Leu Ala Asn Pro Lys Lys
 225      230      235
Ser Cys Asn Lys Thr Phe Ser Thr Met His Glu Leu Val Thr His Val
      245      250
Thr Val Glu His Val Gly Gly Pro Glu Gln Ser Asn His Ile Cys Phe
      260      265
Trp Glu Glu Cys Pro Arg Glu Gly Lys Pro Phe Lys Ala Lys Tyr Lys
      275      280
Leu Val Asn His Ile Arg Val His Thr Gly Glu Lys Pro Phe Pro Cys
      290      295
Pro Phe Pro Gly Cys Gly Lys Val Phe Ala Arg Ser Glu Asn Leu Lys
 305      310      315
Ile His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Lys Cys Glu Phe
      325      330
Glu Gly Cys Asp Arg Arg Phe Ala Asn Ser Ser Asp Arg Lys Lys His
      340      345
Met His Val His Thr Ser Asp Lys Pro Tyr Leu Cys Lys Met Cys Asp
      355      360
Lys Ser Tyr Thr His Pro Ser Ser Leu Arg Lys His Met Lys Val His
      370      375
Glu Ser Ser Ser Gln Gly Ser Gln Pro Ser Pro Ala Ala Ser Ser Gly
 385      390      395
Tyr Glu Ser Ser Thr Pro Pro Thr Ile Val Ser Pro Ser Thr Asp Asn
      405      410
Pro Thr Thr Ser Ser Leu Ser Pro Ser Ser Ser Ala Val His His Thr
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Ala Gly His Ser Ala Leu Ser Ser Asn Phe Asn Glu Trp Tyr Val
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<210> 29  
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 <212> PRT  
 <213> homo sapiens

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Asp Trp Asp Pro Thr Cys Met Lys Met Asp Glu Val Leu Tyr Ser Ile
      35      40
Ala Glu Lys Val Lys Asn Phe Ala Val Ile Tyr Leu Val Asp Ile Thr
      50      55
Glu Val Pro Asp Phe Asn Lys Met Tyr Glu Leu Tyr Asp Pro Cys Thr
 65      70      75
Val Met Phe Phe Phe Arg Asn Lys His Ile Met Ile Asp Leu Gly Thr
      85      90
Gly Asn Asn Asn Lys Ile Asn Trp Ala Met Glu Asp Lys Gln Glu Met
      100      105
Val Asp Ile Ile Glu Thr Val Tyr Arg Gly Ala Arg Lys Gly Arg Gly
      115      120
Leu Val Val Ser Pro Lys Asp Tyr Ser Thr Lys Tyr Arg Tyr
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tgtccattgg actgtaaggt ttatgtaggc aatcttgga acaatggcaa caagacggaa 180

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## 33178SEQLIST.TXT

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ctagatggaa gaacactatg tggctgccgt gtaagagtgg aactgtcgaa tggtgaaaaa 360
agaagtagaa atcgtggccc acctccctct tggggctgct gccctcgaga tgattatcgt 420
aggaggagtc ctccacctcg tcgcagatct ccaagaagga gaagcttctc tcgcagccgg 480
agcaggtccc tttctagaga taggagaaga gagagatcgc tgtctcgga gagaaatcac 540
aagccgtccc gatccttctc taggtctcgt agtcgatcta ggtcaaataa aaggaaatag 600
aagacagttt gcaagagaag tgggtgtacag gaaattactt catttgacag gagtatgtac 660
agaaaattca agttttgttt gagacttcat aagcttgggt catttttaag atgttttagc 720
tgttcaaatac tgtttgtctc ttgaaacagt gacacaaagg tgtaattctc tatggtttga 780
aatggatcat acgaggcatg taataccaag aattgttact ttacaatgtt cccttaagca 840
aaattgaatt tcatttgaac ttttagttat gcacagactg ataataaacc tctaaacctg 900
cccagcggaa gtgtgttttt ttttaaatTT aaatacagaa acaactggca aaaattgaac 960
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gtatatggat acatggctgt tcgtgacatt ctttatgtgc aaatttgtga tttcaaaaat 1260
gtcctgccag ttttaagggt cattgtagag ccgaactttg agttactgtg caagattttt 1320
ttttcatgct gtcatttga atatgttttT tgagaatcct tgggattaaa gttttggtta 1380
caaattgtta aaaaaaaaaa aaa 1403

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<210> 31  
 <211> 164  
 <212> PRT  
 <213> homo sapiens

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<400> 31
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1      5      10      15
Leu Gly Asn Asn Gly Asn Lys Thr Glu Leu Glu Arg Ala Phe Gly Tyr
20      25      30
Tyr Gly Pro Leu Arg Ser Val Trp Val Ala Arg Asn Pro Pro Gly Phe
35      40      45
Ala Phe Val Glu Phe Glu Asp Pro Arg Asp Ala Ala Asp Ala Val Arg
50      55      60
Glu Leu Asp Gly Arg Thr Leu Cys Gly Cys Arg Val Arg Val Glu Leu
65      70      75      80
Ser Asn Gly Glu Lys Arg Ser Arg Asn Arg Gly Pro Pro Pro Ser Trp
85      90      95
Gly Arg Arg Pro Arg Asp Asp Tyr Arg Arg Arg Ser Pro Pro Pro Arg
100     105     110
Arg Arg Ser Pro Arg Arg Arg Ser Phe Ser Arg Ser Arg Ser Arg Ser
115     120     125
Leu Ser Arg Asp Arg Arg Arg Glu Arg Ser Leu Ser Arg Glu Arg Asn
130     135     140
His Lys Pro Ser Arg Ser Phe Ser Arg Ser Arg Ser Arg Ser Arg Ser
145     150     155     160
Asn Glu Arg Lys

```

<210> 32  
 <211> 1972  
 <212> DNA  
 <213> homo sapiens

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<400> 32
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catgagcgac agcggcgagc agaactacgg cgagcgggaa tcccgttctg cttccagaag 180
tggaagtgtc cacggatcgg ggaaatctgc aaggcatacc cctgcaaggc ctgctccaa 240
ggaagattcc aggcgttcca gatcaaagtc caggctccga tctgaatcta ggtctagatc 300
cagaagaagc tcccgaaggc attatacccg gtcacggtct cgctcccgct cccatagacg 360
atcacgtagc aggtcttaca gtcgagatta tcgtagacgg cacagccaca gccattctcc 420
catgtctact cgcaggcgct atgttgggaa tcgggcaaat cctgatccta actgttgtct 480
tgaggtatTT gggctgagct tgtacaccac agaagagat ctaagagaag tggtctctaa 540
atatggctcc attgccgatg tgtctattgt atatgaccag cagtctaggc gttcaagagg 600

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## 33178SEQLIST.TXT

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tacgccaaca ccaggaattt acatggggag acctacctat ggcagctctc gccgtcggga 780
ttactatgac agaggatatg atcggggcta tgatgatcgg gactactata gcagatcata 840
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tagaaggcgg tcaccttctc cttactatag tctgtggagga tacagatcac gttccagatc 960
tcgatcatac tcacctcgtc gctattaaag catgaagact ttctgaaacc tgccttagag 1020
ctgggatatt gtttgtgggc aatatttttt attgtctctt gtttaaaaag tgaacagtgc 1080
ctagtgaagt taggtgactt ttacaccttt tacgatgact acttttggtg gagttgaaat 1140
gctgttttca ttctgcattt gtgtagtttg gtgctttggt ccaagttaag tgttttcaga 1200
aaagtatggt ttgcatgtat ttttttacag tctaaatttt gactgctgag aagtttctat 1260
tgtacaaaac ttcatttaaa aggtttttct actgaatcca gggatttctg aagatcgaag 1320
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ttaaatatta ttttcaggtc ctttgcttac caaaggaggc ccaatttcac tcaaatgttt 1920
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<210> 33  
 <211> 288  
 <212> PRT  
 <213> homo sapiens

<400> 33

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			20					25					30		
Thr	Pro	Ala	Arg	Ser	Arg	Ser	Lys	Glu	Asp	Ser	Arg	Arg	Ser	Arg	Ser
			35				40					45			
Lys	Ser	Arg	Ser	Arg	Ser	Glu	Ser	Arg	Ser	Arg	Ser	Arg	Arg	Ser	Ser
			50			55					60				
Arg	Arg	His	Tyr	Thr	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Ser	His	Arg	Arg
65				70					75					80	
Ser	Arg	Ser	Arg	Ser	Tyr	Ser	Arg	Asp	Tyr	Arg	Arg	Arg	His	Ser	His
				85					90				95		
Ser	His	Ser	Pro	Met	Ser	Thr	Arg	Arg	Arg	His	Val	Gly	Asn	Arg	Ala
			100					105					110		
Asn	Pro	Asp	Pro	Asn	Cys	Cys	Leu	Gly	Val	Phe	Gly	Leu	Ser	Leu	Tyr
			115				120					125			
Thr	Thr	Glu	Arg	Asp	Leu	Arg	Glu	Val	Phe	Ser	Lys	Tyr	Gly	Pro	Ile
			130			135					140				
Ala	Asp	Val	Ser	Ile	Val	Tyr	Asp	Gln	Gln	Ser	Arg	Arg	Ser	Arg	Gly
145				150						155					160
Phe	Ala	Phe	Val	Tyr	Phe	Glu	Asn	Val	Asp	Asp	Ala	Lys	Glu	Ala	Lys
				165					170					175	
Glu	Arg	Ala	Asn	Gly	Met	Glu	Leu	Asp	Gly	Arg	Arg	Ile	Arg	Val	Asp
			180					185					190		
Phe	Ser	Ile	Thr	Lys	Arg	Pro	His	Thr	Pro	Thr	Pro	Gly	Ile	Tyr	Met
			195				200					205			
Gly	Arg	Pro	Thr	Tyr	Gly	Ser	Ser	Arg	Arg	Arg	Asp	Tyr	Tyr	Asp	Arg
			210			215					220				
Gly	Tyr	Asp	Arg	Gly	Tyr	Asp	Asp	Arg	Asp	Tyr	Tyr	Ser	Arg	Ser	Tyr
225				230						235					240
Arg	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Trp	Arg	Ala	Ala	Gln	Asp	Arg
				245					250					255	
Asp	Gln	Ile	Tyr	Arg	Arg	Arg	Ser	Pro	Ser	Pro	Tyr	Tyr	Ser	Arg	Gly
			260					265					270		
Gly	Tyr	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Ser	Tyr	Ser	Pro	Arg	Arg	Tyr
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## 33178SEQLIST.TXT

<210> 34  
 <211> 904  
 <212> DNA  
 <213> homo sapiens

<400> 34  
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 gtcattggaga caggtgtctt cggttgacac ataaaccgac gtttagccag accattgccc 180  
 tcttgaacat ttaccgtaac cctcaaaact cttcccagtc tgctgacggt ttgcgctgtg 240  
 ccgtgagcga tgtggagatg caggaacact atgatgagtt ttttgaggag gtttttacag 300  
 aaatggagga gaagtatggg gaagtagagg agatgaacgt ctgtgacaac ctgggagacc 360  
 acctggtggg gaacgtgtac gtcaagtttc gccgtgagga agatgcggaa aaggctgtga 420  
 ttgacttgaa taaccgttgg tttaatggac agccgatcca cgccgagctg tcaccctga 480  
 cggacttcag agaagcctgc tgccgtcagt atgagatggg agaatgcaca cgaggcggct 540  
 tctgcaactt catgcatttg aagcccattt ccagagagct gcggcgggag ctgtatggcc 600  
 gccgtcggaa gaagcataga tcaagatccc gatcccggga gcgtcgttct cggctctaga 660  
 accgtggtcg tggcgggtggc ggtggcgggt gtggagggtg cgccggacgg gagcgtgaca 720  
 ggaggcggtc gagagatcgt gaaagatctg ggcgattctg agccatgcca tttttacctt 780  
 atgtctgcta gaaagtgttg tagttgattg accaaaccag ttcataaggg gaatttttta 840  
 aaaaacaaca aaaaaaaac atacaaagat ggttttctga ataaaaattt gtagtgataa 900  
 cagt 904

<210> 35  
 <211> 240  
 <212> PRT  
 <213> homo sapiens

<400> 35  
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 20 25 30  
 Cys Ser Arg Leu His Asn Lys Pro Thr Phe Ser Gln Thr Ile Ala Leu  
 35 40 45  
 Leu Asn Ile Tyr Arg Asn Pro Gln Asn Ser Ser Gln Ser Ala Asp Gly  
 50 55 60  
 Leu Arg Cys Ala Val Ser Asp Val Glu Met Gln Glu His Tyr Asp Glu  
 65 70 75 80  
 Phe Phe Glu Glu Val Phe Thr Glu Met Glu Glu Lys Tyr Gly Glu Val  
 85 90 95  
 Glu Glu Met Asn Val Cys Asp Asn Leu Gly Asp His Leu Val Gly Asn  
 100 105 110  
 Val Tyr Val Lys Phe Arg Arg Glu Asp Ala Glu Lys Ala Val Ile  
 115 120 125  
 Asp Leu Asn Asn Arg Trp Phe Asn Gly Gln Pro Ile His Ala Glu Leu  
 130 135 140  
 Ser Pro Val Thr Asp Phe Arg Glu Ala Cys Cys Arg Gln Tyr Glu Met  
 145 150 155 160  
 Gly Glu Cys Thr Arg Gly Gly Phe Cys Asn Phe Met His Leu Lys Pro  
 165 170 175  
 Ile Ser Arg Glu Leu Arg Arg Glu Leu Tyr Gly Arg Arg Arg Lys Lys  
 180 185 190  
 His Arg Ser Arg Ser Arg Ser Arg Glu Arg Arg Ser Arg Ser Arg Asp  
 195 200 205  
 Arg Gly Arg Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Arg  
 210 215 220  
 Glu Arg Asp Arg Arg Arg Ser Arg Asp Arg Glu Arg Ser Gly Arg Phe  
 225 230 235 240

<210> 36  
 <211> 2090  
 <212> DNA  
 <213> homo sapiens

<400> 36  
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## 33178SEQLIST.TXT

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gaaagaatga cgagaacata acactagaga cagtttgcca tgaccccaag ctcccctacc 660
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<210> 37  
 <211> 567  
 <212> PRT  
 <213> homo sapiens

<400> 37

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			20					25					30		
Asn	Asn	Asp	Met	Ile	Val	Thr	Asp	Asn	Asn	Gly	Ala	Val	Lys	Phe	Pro
		35					40					45			
Gln	Leu	Cys	Lys	Phe	Cys	Asp	Val	Arg	Phe	Ser	Thr	Cys	Asp	Asn	Gln
	50					55					60				
Lys	Ser	Cys	Met	Ser	Asn	Cys	Ser	Ile	Thr	Ser	Ile	Cys	Glu	Lys	Pro
65					70				75					80	
Gln	Glu	Val	Cys	Val	Ala	Val	Trp	Arg	Lys	Asn	Asp	Glu	Asn	Ile	Thr
				85				90						95	
Leu	Glu	Thr	Val	Cys	His	Asp	Pro	Lys	Leu	Pro	Tyr	His	Asp	Phe	Ile
			100					105					110		
Leu	Glu	Asp	Ala	Ala	Ser	Pro	Lys	Cys	Ile	Met	Lys	Glu	Lys	Lys	Lys
		115					120					125			
Pro	Gly	Glu	Thr	Phe	Phe	Met	Cys	Ser	Cys	Ser	Ser	Asp	Glu	Cys	Asn
	130					135					140				
Asp	Asn	Ile	Ile	Phe	Ser	Glu	Glu	Tyr	Asn	Thr	Ser	Asn	Pro	Asp	Leu
145					150				155					160	
Leu	Leu	Val	Ile	Phe	Gln	Val	Thr	Gly	Ile	Ser	Leu	Leu	Pro	Pro	Leu
				165				170						175	
Gly	Val	Ala	Ile	Ser	Val	Ile	Ile	Ile	Phe	Tyr	Cys	Tyr	Arg	Val	Asn
			180					185					190		
Arg	Gln	Gln	Lys	Leu	Ser	Ser	Thr	Trp	Glu	Thr	Gly	Lys	Thr	Arg	Lys
		195					200					205			
Leu	Met	Glu	Phe	Ser	Glu	His	Cys	Ala	Ile	Ile	Leu	Glu	Asp	Asp	Arg

33178SEQLIST.TXT

210	215	220
Ser Asp Ile Ser Ser Thr	Cys Ala Asn Asn Ile	Asn His Asn Thr Glu
225	230	235
Leu Leu Pro Ile Glu	Leu Asp Thr Leu Val	Gly Lys Gly Arg Phe
245	250	255
Glu Val Tyr Lys Ala	Lys Leu Lys Gln Asn Thr	Ser Glu Gln Phe Glu
260	265	270
Thr Val Ala Val Lys	Ile Phe Pro Tyr Glu Glu	Tyr Ala Ser Trp Lys
275	280	285
Thr Glu Lys Asp Ile	Phe Ser Asp Ile Asn Leu	Lys His Glu Asn Ile
290	295	300
Leu Gln Phe Leu Thr	Ala Glu Glu Arg Lys Thr	Glu Leu Gly Lys Gln
305	310	315
Tyr Trp Leu Ile Thr	Ala Phe His Ala Lys Gly	Asn Leu Gln Glu Tyr
325	330	335
Leu Thr Arg His Val	Ile Ser Trp Glu Asp	Leu Arg Lys Leu Gly Ser
340	345	350
Ser Leu Ala Arg Gly	Ile Ala His Leu His	Ser Asp His Thr Pro Cys
355	360	365
Gly Arg Pro Lys Met	Pro Ile Val His Arg	Asp Leu Lys Ser Ser Asn
370	375	380
Ile Leu Val Lys Asn	Asp Leu Thr Cys Cys	Leu Cys Asp Phe Gly Leu
385	390	395
Ser Leu Arg Leu Asp	Pro Thr Leu Ser Val	Asp Asp Leu Ala Asn Ser
405	410	415
Gly Gln Val Gly Thr	Ala Arg Tyr Met Ala	Pro Glu Val Leu Glu Ser
420	425	430
Arg Met Asn Leu Glu	Asn Ala Glu Ser Phe	Lys Gln Thr Asp Val Tyr
435	440	445
Ser Met Ala Leu Val	Leu Trp Glu Met Thr	Ser Arg Cys Asn Ala Val
450	455	460
Gly Glu Val Lys Asp	Tyr Glu Pro Pro Phe	Gly Ser Lys Val Arg Glu
465	470	475
His Pro Cys Val Ser	Met Lys Asp Asn Val	Leu Arg Asp Arg Gly
485	490	495
Arg Pro Glu Ile Pro	Ser Phe Trp Leu Asn	His Gln Gly Ile Gln Met
500	505	510
Val Cys Glu Thr Leu	Thr Glu Cys Trp Asp	His Asp Pro Glu Ala Arg
515	520	525
Leu Thr Ala Gln Cys	Val Ala Glu Arg Phe	Ser Glu Leu Glu His Leu
530	535	540
Asp Arg Leu Ser Gly	Arg Ser Cys Ser Glu	Glu Lys Ile Pro Glu Asp
545	550	555
Gly Ser Leu Asn Thr	Lys Thr Lys	
565		

<210> 38  
 <211> 1725  
 <212> DNA  
 <213> homo sapiens

<400> 38

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gctgcaattg	catgaaatcc	caatgggtgta	gaccagtggc	gatggatcta	ggagtgttacc	240
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gctccccccc	tgccaccacc	cagccacagc	gcaccacaca	gcccccgcc	cagccagcat	600
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aacactcata	tgcttatggc	ttggagaaat	ttcttagttg	ggtgaattaa	aggttaatcc	840
gagaattagc	atggatatac	cgggacctca	tgcagcttgg	cagatatctg	agaaatggtt	900

## 33178SEQLIST.TXT

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gtagtgttat gcatatgttt ctgtgcatgt tctctacaca attgtaagggt gtcactgtat 1680
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<210> 39  
 <211> 144  
 <212> PRT  
 <213> homo sapiens

<400> 39  
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 Glu Asn Ala Ser Val Arg Leu Asp Asn Ser Ser Ser Gly Ala Ser Val  
 35 40 45  
 Val Ala Ile Asp Asn Lys Ile Glu Gln Ala Met Asp Leu Val Lys Ser  
 50 55 60  
 His Leu Met Tyr Ala Val Arg Glu Glu Val Glu Val Leu Lys Glu Gln  
 65 70 75 80  
 Ile Lys Glu Leu Ile Glu Lys Asn Ser Gln Leu Glu Gln Glu Asn Asn  
 85 90 95  
 Leu Leu Lys Thr Leu Ala Ser Pro Glu Gln Leu Ala Gln Phe Gln Ala  
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 Gln Leu Gln Thr Gly Ser Pro Pro Ala Thr Thr Gln Pro Gln Gly Thr  
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 Thr Gln Pro Pro Ala Gln Pro Ala Ser Gln Gly Ser Gly Pro Thr Ala  
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 <211> 1693  
 <212> DNA  
 <213> homo sapiens

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 ctgccccaaag actctccttc ctaattcatg caaaagcctt tagtaccgct gaagacaccc 420  
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 aaagcagtg cagttcttagc caagggttaag tactgcaact gtcgagagca tcttgccttc 1200  
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 <212> PRT  
 <213> homo sapiens

<400> 41

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			20					25					30		
Ala	Pro	Ala	Gln	Leu	Ser	Pro	Ile	Ala	Ser	Ala	Pro	Arg	Leu	Ser	Phe
		35					40					45			
Leu	Ile	His	Ala	Lys	Ala	Phe	Ser	Thr	Ala	Glu	Asp	Thr	Gln	Asn	Glu
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Gly	Lys	Lys	Thr	Lys	Lys	Asn	Lys	Thr	Ala	Phe	Ser	Asn	Val	Gly	Arg
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Lys	Ile	Ser	Gln	Arg	Val	Ile	His	Leu	Phe	Asp	Glu	Lys	Gly	Asn	Asp
			85					90						95	
Leu	Gly	Asn	Met	His	Arg	Ala	Asn	Val	Ile	Arg	Leu	Met	Asp	Glu	Arg
		100						105					110		
Asp	Leu	Arg	Leu	Val	Gln	Arg	Asn	Thr	Ser	Thr	Glu	Pro	Ala	Glu	Tyr
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Gln	Leu	Met	Thr	Gly	Leu	Gln	Ile	Leu	Gln	Glu	Arg	Gln	Arg	Leu	Arg
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Glu	Met	Glu	Lys	Ala	Asn	Pro	Lys	Thr	Gly	Pro	Thr	Leu	Arg	Lys	Glu
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Leu	Ile	Leu	Ser	Ser	Asn	Ile	Gly	Gln	His	Asp	Leu	Asp	Thr	Lys	Thr
			165						170					175	
Lys	Gln	Ile	Gln	Gln	Trp	Ile	Lys	Lys	Lys	His	Leu	Val	Gln	Ile	Thr
		180						185					190		
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	195						200					205			
Ile	Phe	His	Gln	Ile	Leu	Gln	Thr	Met	Pro	Gly	Ile	Ala	Thr	Phe	Ser
	210					215					220				
Ser	Arg	Pro	Gln	Ala	Val	Gln	Gly	Gly	Lys	Ala	Leu	Met	Cys	Val	Leu
225					230					235					240
Arg	Ala	Leu	Ser	Lys	Asn	Glu	Glu	Lys	Ala	Tyr	Lys	Glu	Thr	Gln	Glu
			245						250					255	
Thr	Gln	Glu	Arg	Asp	Thr	Leu	Asn	Lys	Asp	His	Gly	Asn	Asp	Lys	Glu
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<210> 42  
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 <212> DNA  
 <213> homo sapiens

<400> 42

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gattctggag	agtgttaacc	acatccacca	gcattgacatc	gtccacaggg	acctgaagcc	420
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<210> 43  
 <211> 518  
 <212> PRT  
 <213> homo sapiens

<400> 43

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			20					25					30		
Lys	Lys	Thr	Ser	Thr	Gln	Glu	Tyr	Ala	Ala	Lys	Ile	Ile	Asn	Thr	Lys
			35				40					45			
Lys	Leu	Ser	Ala	Arg	Asp	His	Gln	Lys	Leu	Glu	Arg	Glu	Ala	Arg	Ile
			50			55					60				
Cys	Arg	Leu	Leu	Lys	His	Pro	Asn	Ile	Val	Arg	Leu	His	Asp	Ser	Ile
			65		70					75				80	
Ser	Glu	Glu	Gly	Phe	His	Tyr	Leu	Val	Phe	Asp	Leu	Val	Thr	Gly	Gly
			85						90					95	
Glu	Leu	Phe	Glu	Asp	Ile	Val	Ala	Arg	Glu	Tyr	Tyr	Ser	Glu	Ala	Asp
			100					105					110		
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			115			120						125			
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			130			135					140				
Ala	Ser	Lys	Cys	Lys	Gly	Ala	Ala	Val	Lys	Leu	Ala	Asp	Phe	Gly	Leu
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Ala	Ile	Glu	Val	Gln	Gly	Glu	Gln	Gln	Ala	Trp	Phe	Gly	Phe	Ala	Gly
			165						170					175	
Thr	Pro	Gly	Tyr	Leu	Ser	Pro	Glu	Val	Leu	Arg	Lys	Asp	Pro	Tyr	Gly
			180					185					190		
Lys	Pro	Val	Asp	Ile	Trp	Ala	Cys	Gly	Val	Ile	Leu	Tyr	Ile	Leu	Leu
			195				200					205			
Val	Gly	Tyr	Pro	Pro	Phe	Trp	Asp	Glu	Asp	Gln	His	Lys	Leu	Tyr	Gln
			210			215					220				
Gln	Ile	Lys	Ala	Gly	Ala	Tyr	Asp	Phe	Pro	Ser	Pro	Glu	Trp	Asp	Thr
			225		230					235					240
Val	Thr	Pro	Glu	Ala	Lys	Asn	Leu	Ile	Asn	Gln	Met	Leu	Thr	Ile	Asn
			245						250					255	
Pro	Ala	Lys	Arg	Ile	Thr	Ala	Asp	Gln	Ala	Leu	Lys	His	Pro	Trp	Val
			260					265					270		
Cys	Gln	Arg	Ser	Thr	Val	Ala	Ser	Met	Met	His	Arg	Gln	Glu	Thr	Val
			275				280					285			
Glu	Cys	Leu	Arg	Lys	Phe	Asn	Ala	Arg	Arg	Lys	Leu	Lys	Gly	Ala	Ile
			290			295					300				
Leu	Thr	Thr	Met	Leu	Val	Ser	Arg	Asn	Phe	Ser	Ala	Ala	Lys	Ser	Leu
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## 33178SEQLIST.TXT

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 Asn Ser Leu Val Ser Pro Ala Gln Glu Pro Ala Pro Leu Gln Thr Ala  
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 Met Glu Pro Gln Thr Thr Val Val His Asn Ala Thr Asp Gly Ile Lys  
 355 360 365  
 Gly Ser Thr Glu Ser Cys Asn Thr Thr Thr Glu Asp Glu Asp Leu Lys  
 370 375 380  
 Val Arg Lys Gln Glu Ile Ile Lys Ile Thr Glu Gln Leu Ile Glu Ala  
 385 390 395 400  
 Ile Asn Asn Gly Asp Phe Glu Ala Tyr Thr Lys Ile Cys Asp Pro Gly  
 405 410 415  
 Leu Thr Ser Phe Glu Pro Glu Ala Leu Gly Asn Leu Val Glu Gly Met  
 420 425 430  
 Asp Phe His Lys Phe Tyr Phe Glu Asn Leu Leu Ser Lys Asn Ser Lys  
 435 440 445  
 Pro Ile His Thr Thr Ile Leu Asn Pro His Val His Val Ile Gly Glu  
 450 455 460  
 Asp Ala Ala Cys Ile Ala Tyr Ile Arg Leu Thr Gln Tyr Ile Asp Gly  
 465 470 475 480  
 Gln Gly Arg Pro Arg Thr Ser Gln Ser Glu Glu Thr Arg Val Trp His  
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 Pro Ala Ala Pro Leu Gln  
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 <211> 1377  
 <212> DNA  
 <213> homo sapiens

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<210> 45  
 <211> 387  
 <212> PRT  
 <213> homo sapiens

<400> 45  
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 20 25 30

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 65 70 75 80  
 Val Ser Gly His Pro Asn Ile Ile Gln Leu Lys Asp Thr Tyr Glu Thr  
 85 90 95  
 Asn Thr Phe Phe Phe Leu Val Phe Asp Leu Met Lys Arg Gly Glu Leu  
 100 105 110  
 Phe Asp Tyr Leu Thr Glu Lys Val Thr Leu Ser Glu Lys Glu Thr Arg  
 115 120 125  
 Lys Ile Met Arg Ala Leu Leu Glu Val Ile Cys Thr Leu His Lys Leu  
 130 135 140  
 Asn Ile Val His Arg Asp Leu Lys Pro Glu Asn Ile Leu Leu Asp Asp  
 145 150 155 160  
 Asn Met Asn Ile Lys Leu Thr Asp Phe Gly Phe Ser Cys Gln Leu Glu  
 165 170 175  
 Pro Gly Glu Arg Leu Arg Glu Val Cys Gly Thr Pro Ser Tyr Leu Ala  
 180 185 190  
 Pro Glu Ile Ile Glu Cys Ser Met Asn Glu Asp His Pro Gly Tyr Gly  
 195 200 205  
 Lys Glu Val Asp Met Trp Ser Thr Gly Val Ile Met Tyr Thr Leu Leu  
 210 215 220  
 Ala Gly Ser Pro Pro Phe Trp His Arg Lys Gln Met Leu Met Leu Arg  
 225 230 235 240  
 Met Ile Met Ser Gly Asn Tyr Gln Phe Gly Ser Pro Glu Trp Asp Asp  
 245 250 255  
 Tyr Ser Asp Thr Val Lys Asp Leu Val Ser Arg Phe Leu Val Val Gln  
 260 265 270  
 Pro Gln Asn Arg Tyr Thr Ala Glu Glu Ala Leu Ala His Pro Phe Phe  
 275 280 285  
 Gln Gln Tyr Leu Val Glu Glu Val Arg His Phe Ser Pro Arg Gly Lys  
 290 295 300  
 Phe Lys Val Ile Ala Leu Thr Val Leu Ala Ser Val Arg Ile Tyr Tyr  
 305 310 315 320  
 Gln Tyr Arg Arg Val Lys Pro Val Thr Arg Glu Ile Val Ile Arg Asp  
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 Pro Tyr Ala Leu Arg Pro Leu Arg Arg Leu Ile Asp Ala Tyr Ala Phe  
 340 345 350  
 Arg Ile Tyr Gly His Trp Val Lys Lys Gly Gln Gln Gln Asn Arg Ala  
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 <211> 2360  
 <212> DNA  
 <213> homo sapiens

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<210> 47  
 <211> 208  
 <212> PRT  
 <213> homo sapiens

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 35      40      45
Gln Leu Leu Pro Leu Gly Gly Gly Arg Asp Arg Lys Val Arg Asp Leu
 50      55      60
Gln Glu Ala Asp Leu Asp Leu Leu Arg Val Thr Leu Ser Ser Lys Pro
 65      70      75
Gln Ala Leu Ala Thr Pro Asn Lys Glu Glu His Gly Lys Arg Lys Lys
 85      90      95
Lys Gly Lys Gly Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr
100     105     110
Lys Asp Phe Cys Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg
115     120     125
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 Asp Asp Asp Asp Asp Tyr Ser Ser Ser Thr Ser Leu Leu Gly Gln Lys  
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 Ser Thr Glu Gln Tyr Asp Pro Phe Ala Glu His Arg Pro Pro Lys Ile  
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 Lys 770 Lys Ile Val Leu Lys 775 Val Val Lys Gln Cys 780 Cys Gly Thr Asp Gly  
 785 Val Glu Ala Asn Tyr 790 Ile Lys Thr Glu Ile Leu Pro Pro Phe Phe Lys  
 805 His Phe Trp Gln 810 His Arg Met Ala Leu Asp Arg Arg Asn Tyr Arg Gln  
 820 Leu Val Asp Thr Thr Val Glu Leu Ala Asn Lys Val Gly Ala Ala Glu  
 835 Ile Ile Ser Arg Ile Val Asp 840 Asp Leu Lys Asp Glu Ala Glu Gln Tyr  
 850 Arg Lys Met Val Met Glu 855 Thr Ile Glu Lys Ile Met Gly Asn Leu Gly  
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 885 Leu Tyr Ala Phe 890 Gln Glu Gln Thr Thr Glu Asp Ser Val Met Leu Asn  
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 945 Val Met Lys Thr Cys 950 Gln Glu Glu Lys Leu Met Gly His Leu Gly Val  
 965 Val Leu Tyr Glu Tyr Leu Gly Glu Glu Tyr Pro Glu Val Leu Gly Ser  
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## 33178SEQLIST.TXT

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 tgccatggcc ggtctccgtg gggcaggggt gggccgcacg tggaagggct ctgagctgtg 3000  
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<210> 59  
 <211> 941  
 <212> PRT  
 <213> homo sapiens

<400> 59

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			20					25					30		
Asp	Ile	Gly	Pro	Ala	Arg	Asp	Ala	Asn	Asp	Pro	Val	Asp	Asp	Arg	His
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Ala	Pro	Pro	Gly	Lys	Arg	Thr	Val	Gly	Asp	Gln	Met	Lys	Lys	Asn	Gln
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Phe	Asn	Gly	Tyr	Ala	Gly	Ser	Leu	Phe	Ser	Ser	Gly	Pro	Tyr	Glu	Lys
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Asp	Asp	Glu	Glu	Ala	Asp	Ala	Ile	Tyr	Ala	Ala	Leu	Asp	Lys	Arg	Met
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Asp	Glu	Arg	Arg	Lys	Glu	Arg	Arg	Glu	Gln	Arg	Glu	Lys	Glu	Glu	Ile
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Glu	Lys	Tyr	Arg	Met	Glu	Arg	Pro	Lys	Ile	Gln	Gln	Gln	Phe	Ser	Asp
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Leu	Lys	Arg	Lys	Leu	Ala	Glu	Val	Thr	Glu	Glu	Glu	Trp	Leu	Ser	Ile
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Pro	Glu	Val	Gly	Asp	Ala	Arg	Asn	Lys	Arg	Gln	Arg	Asn	Pro	Arg	Tyr
			165					170						175	
Glu	Lys	Leu	Thr	Pro	Val	Pro	Asp	Ser	Phe	Phe	Ala	Lys	His	Leu	Gln
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Thr	Gly	Glu	Asn	His	Thr	Ser	Val	Asp	Pro	Arg	Gln	Thr	Gln	Phe	Gly
	195						200					205			
Gly	Leu	Asn	Thr	Pro	Tyr	Pro	Gly	Gly	Leu	Asn	Thr	Pro	Tyr	Pro	Gly
	210					215					220				
Gly	Met	Thr	Pro	Gly	Leu	Met	Thr	Pro	Gly	Thr	Gly	Glu	Leu	Asp	Met
	225				230					235				240	
Arg	Lys	Ile	Gly	Gln	Ala	Arg	Asn	Thr	Leu	Met	Asp	Met	Arg	Leu	Ser
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Gln	Val	Ser	Asp	Ser	Val	Ser	Gly	Gln	Thr	Val	Val	Asp	Pro	Lys	Gly
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Tyr	Leu	Thr	Asp	Leu	Asn	Ser	Met	Ile	Pro	Thr	His	Gly	Gly	Asp	Ile
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Asn	Asp	Ile	Lys	Lys	Ala	Arg	Leu	Leu	Leu	Lys	Ser	Val	Arg	Glu	Thr
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Val	Thr	Gly	Lys	Leu	Gln	Val	Ala	Arg	Asn	Leu	Ile	Met	Lys	Gly	Thr
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Glu	Met	Cys	Pro	Lys	Ser	Glu	Asp	Val	Trp	Leu	Glu	Ala	Ala	Arg	Leu
		340						345					350		
Gln	Pro	Gly	Asp	Thr	Ala	Lys	Ala	Val	Val	Ala	Gln	Ala	Val	Arg	His
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Leu	Pro	Gln	Ser	Val	Arg	Ile	Tyr	Ile	Arg	Ala	Ala	Glu	Leu	Glu	Thr
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Asp	Ile	Arg	Ala	Lys	Lys	Arg	Val	Leu	Arg	Lys	Ala	Leu	Glu	His	Val
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Pro	Asn	Ser	Val	Arg	Leu	Trp	Lys	Ala	Ala	Val	Glu	Leu	Glu	Glu	Pro
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Glu	Asp	Ala	Arg	Ile	Met	Leu	Ser	Arg	Ala	Val	Glu	Cys	Cys	Pro	Thr
		420						425				430			
Ser	Val	Glu	Leu	Trp	Leu	Ala	Leu	Ala	Arg	Leu	Glu	Thr	Tyr	Glu	Asn
	435					440						445			
Ala	Arg	Lys	Val	Leu	Asn	Lys	Ala	Arg	Glu	Asn	Ile	Pro	Thr	Asp	Arg
	450					455					460				

## 33178SEQLIST.TXT

His 465	Ile	Trp	Ile	Thr	Ala 470	Ala	Lys	Leu	Glu	Glu 475	Ala	Asn	Gly	Asn	Thr 480
Gln	Met	Val	Glu	Lys 485	Ile	Ile	Asp	Arg	Ala 490	Ile	Thr	Ser	Leu	Arg 495	Ala
Asn	Gly	Val	Glu 500	Ile	Asn	Arg	Glu	Gln 505	Trp	Ile	Gln	Asp	Ala 510	Glu	Glu
Cys	Asp	Arg	Ala 515	Gly	Ser	Val	Ala 520	Thr	Cys	Gln	Ala	Val 525	Met	Arg	Ala
Val	Ile	Gly	Ile	Gly	Ile	Glu 535	Glu	Glu	Asp	Arg	Lys 540	His	Thr	Trp	Met
Glu 545	Asp	Ala	Asp	Ser	Cys 550	Val	Ala	His	Asn	Ala 555	Leu	Glu	Cys	Ala	Arg 560
Ala	Ile	Tyr	Ala	Tyr 565	Ala	Leu	Gln	Val	Phe 570	Pro	Ser	Lys	Lys	Ser 575	Val
Trp	Leu	Arg	Ala 580	Ala	Tyr	Phe	Glu	Lys 585	Asn	His	Gly	Thr	Arg 590	Glu	Ser
Leu	Glu	Ala 595	Leu	Leu	Gln	Arg	Ala 600	Val	Ala	His	Cys	Pro 605	Lys	Ala	Glu
Val	Leu	Trp	Leu	Met	Gly	Ala 615	Lys	Ser	Lys	Trp	Leu 620	Ala	Gly	Asp	Val
Pro 625	Ala	Ala	Arg	Ser	Ile 630	Leu	Ala	Leu	Ala	Phe 635	Gln	Ala	Asn	Pro	Asn 640
Ser	Glu	Glu	Ile	Trp 645	Leu	Ala	Ala	Val	Lys 650	Leu	Glu	Ser	Glu	Asn 655	Asp
Glu	Tyr	Glu	Arg 660	Ala	Arg	Arg	Leu	Leu 665	Ala	Lys	Ala	Arg	Ser 670	Ser	Ala
Pro	Thr	Ala 675	Arg	Val	Phe	Met	Lys 680	Ser	Val	Lys	Leu	Glu 685	Trp	Val	Gln
Asp	Asn 690	Ile	Arg	Ala	Ala	Gln 695	Asp	Leu	Cys	Glu	Glu 700	Ala	Leu	Arg	His
Tyr 705	Glu	Asp	Phe	Pro	Lys 710	Leu	Trp	Met	Met	Lys 715	Gly	Gln	Ile	Glu	Glu 720
Gln	Lys	Glu	Met	Met 725	Glu	Lys	Ala	Arg	Glu 730	Ala	Tyr	Asn	Gln	Gly 735	Leu
Lys	Lys	Cys	Pro 740	His	Ser	Thr	Pro	Leu 745	Trp	Leu	Leu	Leu	Ser 750	Arg	Leu
Glu	Glu	Lys 755	Ile	Gly	Gln	Leu	Thr 760	Arg	Ala	Arg	Ala	Ile 765	Leu	Glu	Lys
Ser	Arg 770	Leu	Lys	Asn	Pro	Lys 775	Asn	Pro	Gly	Leu	Trp 780	Leu	Glu	Ser	Val
Arg 785	Leu	Glu	Tyr	Arg	Ala 790	Gly	Leu	Lys	Asn 795	Ile	Ala	Asn	Thr	Leu	Met 800
Ala	Lys	Ala	Leu	Gln 805	Glu	Cys	Pro	Asn 810	Ser	Gly	Ile	Leu	Trp	Ser 815	Glu
Ala	Ile	Phe	Leu 820	Glu	Ala	Arg	Pro	Gln 825	Arg	Arg	Thr	Lys	Ser 830	Val	Asp
Ala	Leu	Lys 835	Cys	Glu	His	Asp 840	Pro	His	Val	Leu	Leu 845	Ala	Val	Ala	
Lys	Leu	Phe 850	Trp	Ser	Gln 855	Arg	Lys	Ile	Thr	Lys	Ala 860	Arg	Glu	Trp	Phe
His 865	Arg	Thr	Val	Lys	Ile 870	Asp	Ser	Asp	Leu	Gly 875	Asp	Ala	Trp	Ala	Phe 880
Phe	Tyr	Lys	Phe 885	Glu	Leu	Gln	His	Gly	Thr 890	Glu	Glu	Gln	Gln	Glu 895	Glu
Val	Arg	Lys	Arg 900	Cys	Glu	Ser	Ala	Glu 905	Pro	Arg	His	Gly	Glu 910	Leu	Trp
Cys	Ala	Val 915	Ser	Lys	Asp	Ile	Ala 920	Asn	Trp	Gln	Lys	Lys 925	Ile	Gly	Asp
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<210> 60  
 <211> 1287  
 <212> DNA  
 <213> homo sapiens

<400> 60

## 33178SEQLIST.TXT

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<210> 61  
 <211> 232  
 <212> PRT  
 <213> homo sapiens

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<400> 61
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35     40     45
Asp Glu Lys Gln Gln Glu Ala Asn Glu Thr Leu Ala Glu Met Glu Glu
50     55     60
Glu Leu Arg Tyr Ala Pro Leu Ser Phe Arg Asn Pro Met Met Ser Lys
65     70     75
Leu Arg Asn Tyr Arg Lys Asp Leu Ala Lys Leu His Arg Glu Val Arg
85     90     95
Ser Thr Pro Leu Thr Ala Thr Pro Gly Gly Arg Gly Asp Met Lys Tyr
100    105    110
Gly Ile Tyr Ala Val Glu Asn Glu His Met Asn Arg Leu Gln Ser Gln
115    120    125
Arg Ala Met Leu Leu Gln Gly Thr Glu Ser Leu Asn Arg Ala Thr Gln
130    135    140
Ser Ile Glu Arg Ser His Arg Ile Ala Thr Glu Thr Asp Gln Ile Gly
145    150    155
Ser Glu Ile Ile Glu Glu Leu Gly Glu Gln Arg Asp Gln Leu Glu Arg
165    170    175
Thr Lys Ser Arg Leu Val Asn Thr Ser Glu Asn Leu Ser Lys Ser Arg
180    185    190
Lys Ile Leu Arg Ser Met Ser Arg Lys Val Thr Thr Asn Lys Leu Leu
195    200    205
Leu Ser Ile Ile Ile Leu Leu Glu Leu Ala Ile Leu Gly Gly Leu Val
210    215    220
Tyr Tyr Lys Phe Phe Arg Ser His
225    230

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<210> 62  
 <211> 1869  
 <212> DNA  
 <213> homo sapiens

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<400> 62
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## 33178SEQLIST.TXT

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<210> 63  
 <211> 474  
 <212> PRT  
 <213> homo sapiens

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Gly Ser Gln Thr Phe Val Asn Pro His Val Ser Ser Phe Gln Gly Ser
35      40      45
Lys Arg Gly Leu Asn Ser Ser Phe Glu Thr Ser Pro Lys Lys Val Lys
50      55      60
Trp Ser Ser Thr Val Thr Ser Pro Arg Leu Ser Leu Phe Ser Asp Gly
65      70      75      80
Asp Ser Ser Glu Ser Glu Asp Thr Leu Ser Ser Ser Glu Arg Ser Lys
85      90      95
Gly Ser Gly Ser Arg Pro Pro Thr Pro Lys Ser Ser Pro Gln Lys Thr
100     105     110
Arg Lys Ser Pro Gln Val Thr Arg Gly Ser Pro Gln Lys Thr Ser Cys
115     120     125
Ser Pro Gln Lys Thr Arg Gln Ser Pro Gln Thr Leu Lys Arg Ser Arg
130     135     140
Val Thr Thr Ser Leu Glu Ala Leu Pro Thr Gly Thr Val Leu Thr Asp
145     150     155     160
Lys Ser Gly Arg Gln Trp Lys Leu Lys Ser Phe Gln Thr Arg Asp Asn
165     170     175
Gln Gly Ile Leu Tyr Glu Ala Ala Pro Thr Ser Thr Leu Thr Cys Asp
180     185     190
Ser Gly Pro Gln Lys Gln Lys Phe Ser Leu Lys Leu Asp Ala Lys Asp
195     200     205
Gly Arg Leu Phe Asn Glu Gln Asn Phe Phe Gln Arg Ala Ala Lys Pro
210     215     220
Leu Gln Val Asn Lys Trp Lys Lys Leu Tyr Ser Thr Pro Leu Leu Ala
225     230     235     240

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## 33178SEQLIST.TXT

Ile Pro Thr Cys Met Gly Phe Gly Val His Gln Asp Lys Tyr Arg Phe  
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 Ser Pro Lys His Val Leu Ser Glu Arg Ser Val Leu Gln Val Ala Cys  
 275 280 285  
 Arg Leu Leu Asp Ala Leu Glu Phe Leu His Glu Asn Glu Tyr Val His  
 290 295 300  
 Gly Asn Val Thr Ala Glu Asn Ile Phe Val Asp Pro Glu Asp Gln Ser  
 305 310 315 320  
 Gln Val Thr Leu Ala Gly Tyr Gly Phe Ala Phe Arg Tyr Cys Pro Ser  
 325 330 335  
 Gly Lys His Val Ala Tyr Val Glu Gly Ser Arg Ser Pro His Glu Gly  
 340 345 350  
 Asp Leu Glu Phe Ile Ser Met Asp Leu His Lys Gly Cys Gly Pro Ser  
 355 360 365  
 Arg Arg Ser Asp Leu Gln Ser Leu Gly Tyr Cys Met Leu Lys Trp Leu  
 370 375 380  
 Tyr Gly Phe Leu Pro Trp Thr Asn Cys Leu Pro Asn Thr Glu Asp Ile  
 385 390 395 400  
 Met Lys Gln Lys Gln Lys Phe Val Asp Lys Pro Gly Pro Phe Val Gly  
 405 410 415  
 Pro Cys Gly His Trp Ile Arg Pro Ser Glu Thr Leu Gln Lys Tyr Leu  
 420 425 430  
 Lys Val Val Met Ala Leu Thr Tyr Glu Glu Lys Pro Pro Tyr Ala Met  
 435 440 445  
 Leu Arg Asn Asn Leu Glu Ala Leu Leu Gln Asp Leu Arg Val Ser Pro  
 450 455 460  
 Tyr Asp Pro Ile Gly Leu Pro Met Val Pro  
 465 470

<210> 64  
 <211> 1543  
 <212> DNA  
 <213> homo sapiens

<400> 64  
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 gcgtcgcggg ccaacatggg ccaggaagag gagctgctga ggatcgccaa aaagctggag 180  
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 aagcggctgc tagactcccc tggacccccca aaaggagaaa aaggagagga aagagaaaag 420  
 gcaaagaaga aggaaaaagg gcttgagtgt tcagactgga agccagaagc aggcctttct 480  
 ccaccaagga aaaaacgaga agacccccaaa accaggagag actctgtgga ctccaagtct 540  
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 tcagcagccc tgaaggcgga cgatgattac aaggactatg gagtcaactg tgacaagatg 780  
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<210> 65  
 <211> 348  
 <212> PRT



&lt;213&gt; homo sapiens

&lt;400&gt; 65

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Leu His Ser Cys Gln Met Ser Ile Gln Leu Leu Gln Thr Thr Arg Ile
 35      40      45
Gly Val Ala Val Asn Gly Val Arg Lys His Cys Ser Asp Lys Glu Val
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Val Ser Leu Ala Lys Val Leu Ile Lys Asn Trp Lys Arg Leu Leu Asp
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Ser Pro Gly Pro Pro Lys Gly Glu Lys Gly Glu Glu Arg Glu Lys Ala
 85      90      95
Lys Lys Lys Glu Lys Gly Leu Glu Cys Ser Asp Trp Lys Pro Glu Ala
100      105      110
Gly Leu Ser Pro Pro Arg Lys Lys Arg Glu Asp Pro Lys Thr Arg Arg
115      120      125
Asp Ser Val Asp Ser Lys Ser Ser Ala Ser Ser Ser Pro Lys Arg Pro
130      135      140
Ser Val Glu Arg Ser Asn Ser Ser Lys Ser Lys Ala Glu Ser Pro Lys
145      150      155      160
Thr Pro Ser Ser Pro Leu Thr Pro Thr Phe Ala Ser Ser Met Cys Leu
165      170      175
Leu Ala Pro Cys Tyr Leu Thr Gly Asp Ser Val Arg Asp Lys Cys Val
180      185      190
Glu Met Leu Ser Ala Ala Leu Lys Ala Asp Asp Asp Tyr Lys Asp Tyr
195      200      205
Gly Val Asn Cys Asp Lys Met Ala Ser Glu Ile Glu Asp His Ile Tyr
210      215      220
Gln Glu Leu Lys Ser Thr Asp Met Lys Tyr Arg Asn Arg Val Arg Ser
225      230      235      240
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245      250      255
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260      265      270
Glu Glu Met Ala Ser Asp Glu Leu Arg Glu Leu Arg Asn Ala Met Thr
275      280      285
Gln Glu Ala Ile Arg Glu His Gln Met Ala Lys Thr Gly Gly Thr Thr
290      295      300
Thr Asp Leu Phe Gln Cys Ser Lys Cys Lys Lys Lys Asn Cys Thr Tyr
305      310      315      320
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325      330      335
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&lt;210&gt; 66

&lt;211&gt; 2430

&lt;212&gt; DNA

&lt;213&gt; homo sapiens

&lt;400&gt; 66

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agagactgct tttgagtgac atttatttag cagctagtaa cttcacttat ttcagggtct 720
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## 33178SEQLIST.TXT

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<210> 67  
 <211> 170  
 <212> PRT  
 <213> homo sapiens

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 Asn Asp Leu Tyr Arg Trp Glu Val Leu Ile Ile Gly Pro Pro Asp Thr  
 35 40 45  
 Leu Tyr Glu Gly Gly Val Phe Lys Ala His Leu Thr Phe Pro Lys Asp  
 50 55 60  
 Tyr Pro Leu Arg Pro Pro Lys Met Lys Phe Ile Thr Glu Ile Trp His  
 65 70 75 80  
 Pro Asn Val Asp Lys Asn Gly Asp Val Cys Ile Ser Ile Leu His Glu  
 85 90 95  
 Pro Gly Glu Asp Lys Tyr Gly Tyr Glu Lys Pro Glu Glu Arg Trp Leu  
 100 105 110  
 Pro Ile His Thr Val Glu Thr Ile Met Ile Ser Val Ile Ser Met Leu  
 115 120 125  
 Ala Asp Pro Asn Gly Asp Ser Pro Ala Asn Val Asp Ala Ala Lys Glu  
 130 135 140  
 Trp Arg Glu Asp Arg Asn Gly Glu Phe Lys Arg Lys Val Ala Arg Cys  
 145 150 155 160  
 Val Arg Lys Ser Gln Glu Thr Ala Phe Glu  
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<210> 68  
 <211> 2258  
 <212> DNA  
 <213> homo sapiens

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## 33178SEQLIST.TXT

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<210> 69  
 <211> 574  
 <212> PRT  
 <213> homo sapiens

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20     25     30
Arg Trp Pro Pro Pro Lys Pro Arg Leu Lys Ser Gly Gly Phe
35     40     45
Gly Pro Asp Pro Gly Ser Gly Thr Thr Val Pro Ala Arg Arg Leu Pro
50     55     60
Val Pro Arg Pro Ser Phe Asp Ala Ser Ala Ser Glu Glu Glu Glu Glu
65     70     75     80
Glu Glu Glu Glu Glu Asp Glu Asp Glu Glu Glu Glu Val Ala Ala Trp
85     90     95
Arg Leu Pro Pro Arg Trp Ser Gln Leu Gly Thr Ser Gln Arg Pro Arg
100    105    110
Pro Ser Arg Pro Thr His Arg Lys Thr Cys Ser Gln Arg Arg Arg
115    120    125
Ala Met Arg Ala Phe Arg Met Leu Leu Tyr Ser Lys Ser Thr Ser Leu
130    135    140
Thr Phe His Trp Lys Leu Trp Gly Arg His Arg Gly Arg Arg Arg Gly
145    150    155    160
Leu Ala His Pro Lys Asn His Leu Ser Pro Gln Gln Gly Gly Ala Thr
165    170    175
Pro Gln Val Pro Ser Pro Cys Cys Arg Phe Asp Ser Pro Arg Gly Pro
180    185    190
Pro Pro Pro Arg Leu Gly Leu Leu Gly Ala Leu Met Ala Glu Asp Gly
195    200    205

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## 33178SEQLIST.TXT

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 225 230 235 240  
 Leu Ser Cys Thr Leu Pro Asn Gly Phe Gly Gly Gln Ser Gly Pro Glu  
 245 250 255  
 Gly Glu Arg Ser Leu Ala Pro Pro Asp Ala Ser Ile Leu Ile Ser Asn  
 260 265 270  
 Val Cys Ser Ile Gly Asp His Val Ala Gln Glu Leu Phe Gln Gly Ser  
 275 280 285  
 Asp Leu Gly Met Ala Glu Glu Ala Glu Arg Pro Gly Glu Lys Ala Gly  
 290 295 300  
 Gln His Ser Pro Leu Arg Glu Glu His Val Thr Cys Val Gln Ser Ile  
 305 310 315 320  
 Leu Asp Glu Phe Leu Gln Thr Tyr Gly Ser Leu Ile Pro Leu Ser Thr  
 325 330 335  
 Asp Glu Val Val Glu Lys Leu Glu Asp Ile Phe Gln Gln Glu Phe Ser  
 340 345 350  
 Thr Pro Ser Arg Lys Gly Leu Val Leu Gln Leu Ile Gln Ser Tyr Gln  
 355 360 365  
 Arg Met Pro Gly Asn Ala Met Val Arg Gly Phe Arg Val Ala Tyr Lys  
 370 375 380  
 Arg His Val Leu Thr Met Asp Asp Leu Gly Thr Leu Tyr Gly Gln Asn  
 385 390 395 400  
 Trp Leu Asn Asp Gln Val Met Asn Met Tyr Gly Asp Leu Val Met Asp  
 405 410 415  
 Thr Val Pro Glu Lys Val His Phe Phe Asn Ser Phe Phe Tyr Asp Lys  
 420 425 430  
 Leu Arg Thr Lys Gly Tyr Asp Gly Val Lys Arg Trp Thr Lys Asn Val  
 435 440 445  
 Asp Ile Phe Asn Lys Glu Leu Leu Ile Pro Ile His Leu Glu Val  
 450 455 460  
 His Trp Ser Leu Ile Ser Val Asp Val Arg Arg Arg Thr Ile Thr Tyr  
 465 470 475 480  
 Phe Asp Ser Gln Arg Thr Leu Asn Arg Arg Cys Pro Lys His Ile Ala  
 485 490 495  
 Lys Tyr Leu Gln Ala Glu Ala Val Lys Lys Asp Arg Leu Asp Phe His  
 500 505 510  
 Gln Gly Trp Lys Gly Tyr Phe Lys Met Asn Val Ala Arg Gln Asn Asn  
 515 520 525  
 Asp Ser Asp Cys Gly Ala Phe Val Leu Gln Tyr Cys Lys His Leu Ala  
 530 535 540  
 Leu Ser Gln Pro Phe Ser Phe Thr Gln Gln Asp Met Pro Lys Leu Arg  
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 Arg Gln Ile Tyr Lys Glu Leu Cys His Cys Lys Leu Thr Val  
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 <211> 2733  
 <212> DNA  
 <213> homo sapiens

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## 33178SEQLIST.TXT

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 <212> PRT  
 <213> homo sapiens

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 35 40 45  
 Arg Tyr Met Glu Val Ser Gly Asn Leu Arg Asp Leu Tyr Asp Asp Lys  
 50 55 60  
 Asp Gly Leu Arg Lys Glu Glu Leu Asn Ala Ile Ser Gly Pro Asn Glu  
 65 70 75 80  
 Phe Ala Glu Phe Tyr Asn Arg Leu Lys Gln Ile Lys Glu Phe His Arg  
 85 90 95  
 Lys His Pro Asn Glu Ile Cys Val Pro Met Ser Val Glu Phe Glu Glu  
 100 105 110  
 Leu Leu Lys Ala Arg Glu Asn Pro Ser Glu Glu Ala Gln Asn Leu Val  
 115 120 125  
 Glu Phe Thr Asp Glu Glu Gly Tyr Gly Arg Tyr Leu Asp Leu His Asp  
 130 135 140  
 Cys Tyr Leu Lys Tyr Ile Asn Leu Lys Ala Ser Glu Lys Leu Asp Tyr  
 145 150 155 160  
 Ile Thr Tyr Leu Ser Ile Phe Asp Gln Leu Phe Asp Ile Pro Lys Glu  
 165 170 175  
 Arg Lys Asn Ala Glu Tyr Lys Arg Tyr Leu Glu Met Leu Leu Glu Tyr  
 180 185 190  
 Leu Gln Asp Tyr Thr Asp Arg Val Lys Pro Leu Gln Asp Gln Asn Glu  
 195 200 205  
 Leu Phe Gly Lys Ile Gln Ala Glu Phe Glu Lys Lys Trp Glu Asn Gly  
 210 215 220  
 Thr Phe Pro Gly Trp Pro Lys Glu Thr Ser Ser Ala Leu Thr His Ala

## 33178SEQLIST.TXT

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			260					265					270		
Lys	Cys	Gly	Gly	Thr	Leu	Glu	Glu	Arg	Ala	Gln	Arg	Leu	Phe	Ser	Thr
		275					280					285			
Lys	Gly	Lys	Ser	Leu	Glu	Ser	Leu	Asp	Thr	Ser	Leu	Phe	Ala	Lys	Asn
	290					295					300				
Pro	Lys	Ser	Lys	Gly	Thr	Lys	Arg	Asp	Thr	Glu	Arg	Asn	Lys	Asp	Ile
305					310					315				320	
Ala	Phe	Leu	Glu	Ala	Gln	Ile	Tyr	Glu	Tyr	Val	Glu	Ile	Leu	Gly	Glu
				325					330					335	
Gln	Arg	His	Leu	Thr	His	Glu	Asn	Val	Gln	Arg	Lys	Gln	Ala	Arg	Thr
			340					345					350		
Gly	Glu	Glu	Arg	Glu	Glu	Glu	Glu	Glu	Glu	Gln	Ile	Ser	Glu	Ser	Glu
		355					360					365			
Ser	Glu	Asp	Glu	Glu	Asn	Glu	Ile	Ile	Tyr	Asn	Pro	Lys	Asn	Leu	Pro
	370					375					380				
Leu	Gly	Trp	Asp	Gly	Lys	Pro	Ile	Pro	Tyr	Trp	Leu	Tyr	Lys	Leu	His
385					390					395				400	
Gly	Leu	Asn	Ile	Asn	Tyr	Asn	Cys	Glu	Ile	Cys	Gly	Asn	Tyr	Thr	Tyr
				405					410					415	
Arg	Gly	Pro	Lys	Ala	Phe	Gln	Arg	His	Phe	Ala	Glu	Trp	Arg	His	Ala
			420					425					430		
His	Gly	Met	Arg	Cys	Leu	Gly	Ile	Pro	Asn	Thr	Ala	His	Phe	Ala	Asn
		435					440					445			
Val	Thr	Gln	Ile	Glu	Asp	Ala	Val	Ser	Leu	Trp	Ala	Lys	Leu	Lys	Leu
	450				455						460				
Gln	Lys	Ala	Ser	Glu	Arg	Trp	Gln	Pro	Asp	Thr	Glu	Glu	Glu	Tyr	Glu
465					470				475					480	
Asp	Ser	Ser	Gly	Asn	Val	Val	Asn	Lys	Lys	Thr	Tyr	Glu	Asp	Leu	Lys
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Arg	Gln	Gly	Leu	Leu											
			500												

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 <212> DNA  
 <213> homo sapiens

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 atagaagcac atgcagtggc ccagcaagtg cagcaggtcc atgtggctac ttacaccgag 180  
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 gcatcagagg ccaccaggc ggtggcatcg ttggcagagg ccgcagtggc agcttctcag 1260  
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 gtcgcccacc tggctgaggc cactttacaa ggtgggggac agatcgctct gtctggggaa 1380  
 accgcagcag ccgtcggagc acttactgga gtccaagatg ctaatggcct ctttatggca 1440  
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## 33178SEQLIST.TXT

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catggaatta tctgtatgaa atcaagggtgc gctgtggaaa caataattca cccagtttag 2100
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<210> 73  
 <211> 522  
 <212> PRT  
 <213> homo sapiens

<400> 73

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Thr Glu His Ser Met Leu Ser Ala Asp Glu Asp Ser Pro Ser Ser Pro
35     40     45
Glu Asp Thr Ser Tyr Asp Asp Ser Asp Ile Leu Asn Ser Thr Ala Ala
50     55     60
Asp Glu Val Thr Ala His Leu Ala Ala Ala Gly Pro Val Gly Met Ala
65     70     75     80
Ala Ala Ala Ala Val Ala Thr Gly Lys Lys Arg Lys Arg Pro His Val
85     90     95
Phe Glu Ser Asn Pro Ser Ile Arg Lys Arg Gln Gln Thr Arg Leu Leu
100    105    110
Arg Lys Leu Arg Ala Thr Leu Asp Glu Tyr Thr Thr Arg Val Gly Gln
115    120    125
Gln Ala Ile Val Leu Cys Ile Ser Pro Ser Lys Pro Asn Pro Val Phe
130    135    140
Lys Val Phe Gly Ala Ala Pro Leu Glu Asn Val Val Arg Lys Tyr Lys
145    150    155    160
Ser Met Ile Leu Glu Asp Leu Glu Ser Ala Leu Ala Glu His Ala Pro
165    170    175
Ala Pro Gln Glu Val Asn Ser Glu Leu Pro Pro Leu Thr Ile Asp Gly
180    185    190
Ile Pro Val Ser Val Asp Lys Met Thr Gln Ala Gln Leu Arg Ala Phe
195    200    205
Ile Pro Glu Met Leu Lys Tyr Ser Thr Gly Arg Gly Lys Pro Gly Trp
210    215    220
Gly Lys Glu Ser Cys Lys Pro Ile Trp Trp Pro Glu Asp Ile Pro Trp
225    230    235    240
Ala Asn Val Arg Ser Asp Val Arg Thr Glu Gln Lys Gln Arg Val
245    250    255
Ser Trp Thr Gln Ala Leu Arg Thr Ile Val Lys Asn Cys Tyr Lys Gln
260    265    270
His Gly Arg Glu Asp Leu Leu Tyr Ala Phe Glu Asp Gln Gln Thr Gln
275    280    285
Thr Gln Ala Thr Ala Thr His Ser Ile Ala His Leu Val Pro Ser Gln
290    295    300
Thr Val Val Gln Thr Phe Ser Asn Pro Asp Gly Thr Val Ser Leu Ile
305    310    315    320
Gln Val Gly Thr Gly Ala Thr Val Ala Thr Leu Ala Asp Ala Ser Glu
325    330    335
Leu Pro Thr Thr Val Thr Val Ala Gln Val Asn Tyr Ser Ala Val Ala
340    345    350

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## 33178SEQLIST.TXT

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 370 375 380  
 Leu Ala Glu Ala Ala Val Ala Ala Ser Gln Glu Met Gln Gln Gly Ala  
 385 390 395 400  
 Thr Val Thr Met Ala Leu Asn Ser Glu Ala Ala His Ala Val Ala  
 405 410 415  
 Thr Leu Ala Glu Ala Thr Leu Gln Gly Gly Gly Gln Ile Val Leu Ser  
 420 425 430  
 Gly Glu Thr Ala Ala Ala Val Gly Ala Leu Thr Gly Val Gln Asp Ala  
 435 440 445  
 Asn Gly Leu Phe Met Ala Asp Arg Ala Gly Arg Lys Trp Ile Leu Thr  
 450 455 460  
 Asp Lys Ala Thr Gly Leu Val Gln Ile Pro Val Ser Met Tyr Gln Thr  
 465 470 475 480  
 Val Val Thr Ser Leu Ala Gln Gly Asn Gly Pro Val Gln Val Ala Met  
 485 490 495  
 Ala Pro Val Thr Thr Arg Ile Ser Asp Ser Ala Val Thr Met Asp Gly  
 500 505 510  
 Gln Ala Val Glu Val Val Thr Leu Glu Gln  
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<210> 74  
 <211> 1806  
 <212> DNA  
 <213> homo sapiens

<400> 74  
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 cttcgggaac aaggaaatgc ggatcctcat gttgggctcg gacgcggccg gcaagacaac 600  
 aatcctgtac aagttgaagc tgggccagtc ggtgaccacc attcccactg tgggtttcaa 660  
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 caagatccgg ccgctctggc ggcattacta cactgggacc caaggtctca tcttcgtagt 780  
 ggactgcgac gaccgcgacc gcatcgatga ggctcgccag gagctgcacc gcattatcaa 840  
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 tgccatgaaa ccccacgaga tccaggagaa actgggcctg acccggattc gggacaggaa 960  
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 caaataatga gtaatatgtt aatatgttcc agttgcacct cagtatgtta aacaggtaat 1740  
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<210> 75  
 <211> 175  
 <212> PRT  
 <213> homo sapiens

<400> 75



## 33178SEQLIST.TXT

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Leu Met Leu Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu Tyr Lys
20      25      30
Leu Lys Leu Gly Gln Ser Val Thr Thr Ile Pro Thr Val Gly Phe Asn
35      40      45
Val Glu Thr Val Thr Tyr Lys Asn Val Lys Phe Asn Val Trp Asp Val
50      55      60
Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Tyr Thr Gly
65      70      75      80
Thr Gln Gly Leu Ile Phe Val Val Asp Cys Ala Asp Arg Asp Arg Ile
85      90      95
Asp Glu Ala Arg Gln Glu Leu His Arg Ile Ile Asn Asp Arg Glu Met
100     105     110
Arg Asp Ala Ile Ile Leu Ile Phe Ala Asn Lys Gln Asp Leu Pro Asp
115     120     125
Ala Met Lys Pro His Glu Ile Gln Glu Lys Leu Gly Leu Thr Arg Ile
130     135     140
Arg Asp Arg Asn Trp Tyr Val Gln Pro Ser Cys Ala Thr Ser Gly Asp
145     150     155     160
Gly Leu Tyr Glu Gly Leu Thr Trp Leu Thr Ser Asn Tyr Lys Ser
165     170     175

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<210> 76  
 <211> 1407  
 <212> DNA  
 <213> homo sapiens

<400> 76

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<210> 77  
 <211> 249  
 <212> PRT  
 <213> homo sapiens

<400> 77

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20      25      30
Ala Cys Leu Gly Leu Leu Leu Ala Val Val Ser Leu Gly Ser Arg Ala
35      40      45
Ser Leu Ser Ala Gln Glu Pro Ala Gln Glu Glu Leu Val Ala Glu Glu

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## 33178SEQLIST.TXT

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	85	90
Lys Gly Arg Lys Thr Arg Ala Arg Arg Ala Ile Ala Ala His Tyr Glu		95
	100	105
Val His Pro Arg Pro Gly Gln Asp Gly Ala Gln Ala Gly Val Asp Gly		110
	115	120
Thr Val Ser Gly Trp Glu Glu Ala Arg Ile Asn Ser Ser Ser Pro Leu		125
	130	135
Arg Tyr Asn Arg Gln Ile Gly Glu Phe Ile Val Thr Arg Ala Gly Leu		140
145	150	155
Tyr Tyr Leu Tyr Cys Gln Val His Phe Asp Glu Gly Lys Ala Val Tyr		160
	165	170
Leu Lys Leu Asp Leu Leu Val Asp Gly Val Leu Ala Leu Arg Cys Leu		175
	180	185
Glu Glu Phe Ser Ala Thr Ala Ala Ser Ser Leu Gly Pro Gln Leu Arg		190
	195	200
Leu Cys Gln Val Ser Gly Leu Leu Ala Leu Arg Pro Gly Ser Ser Leu		205
	210	215
Arg Ile Arg Thr Leu Pro Trp Ala His Leu Lys Ala Ala Pro Phe Leu		220
225	230	235
Thr Tyr Phe Gly Leu Phe Gln Val His		240
	245	

<210> 78  
 <211> 2444  
 <212> DNA  
 <213> homo sapiens

<400> 78

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agacagaagc	aggctggagg	taaggccttt	gagcccaaaa	agccttatca	agtgtcttcc	2040
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## 33178SEOLIST.TXT

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tgcttaata	gtagggttaag	ttgttaagag	tgggggagag	caggctggca	gctctccagt	2340
caggaggcat	agtttttag	gaacaataca	agcacttgga	ctcttgctct	ttctactctg	2400
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<210> 79
<211> 537
<212> PRT
<213> homo sapiens
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<400> 79

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Ile	Pro	Gly 35	Glu	Arg	Ser	Thr	Asp 40	Thr	Thr	Lys	Thr	His 45	Pro	Thr	Ile
Lys	Ile 50	Asn	Gly	Tyr	Thr	Gly 55	Pro	Gly	Thr	Val	Arg 60	Ile	Ser	Leu	Val
Thr 65	Lys	Asp	Pro	Pro	His 70	Arg	Pro	His	Pro	His 75	Glu	Leu	Val	Gly	Lys 80
Asp	Cys	Arg	Asp	Gly 85	Phe	Tyr	Glu	Ala	Glu 90	Leu	Cys	Pro	Asp	Arg 95	Cys
Ile	His	Ser	Phe 100	Gln	Asn	Leu	Gly	Ile 105	Gln	Cys	Val	Lys	Lys 110	Arg	Asp
Leu	Glu	Gln 115	Ala	Ile	Ser	Gln	Arg 120	Ile	Gln	Thr	Asn	Asn 125	Asn	Pro	Phe
Gln	Val 130	Pro	Ile	Glu	Glu	Gln 135	Arg	Gly	Asp	Tyr	Asp 140	Leu	Asn	Ala	Val
Arg 145	Leu	Cys	Phe	Gln	Val 150	Thr	Val	Arg	Asp	Pro 155	Ser	Gly	Arg	Pro	Leu 160
Arg	Leu	Pro	Pro	Val 165	Leu	Ser	His	Pro	Ile 170	Phe	Asp	Asn	Arg	Ala 175	Pro
Asn	Thr	Ala	Glu 180	Leu	Lys	Ile	Cys	Arg 185	Val	Asn	Arg	Asn	Ser 190	Gly	Ser
Cys	Leu	Gly 195	Gly	Asp	Glu	Ile	Phe 200	Leu	Leu	Cys	Asp	Lys 205	Val	Gln	Lys
Glu	Asp 210	Ile	Glu	Val	Tyr	Phe 215	Thr	Gly	Pro	Gly	Trp 220	Glu	Ala	Arg	Gly
Ser 225	Phe	Ser	Gln	Ala	Asp 230	Val	His	Arg	Gln	Val 235	Ala	Ile	Val	Phe	Arg 240
Thr	Pro	Pro	Tyr	Ala 245	Asp	Pro	Ser	Leu	Gln 250	Ala	Pro	Val	Arg	Val 255	Ser
Met	Gln	Leu	Arg 260	Arg	Pro	Ser	Asp	Arg 265	Glu	Leu	Ser	Glu	Pro 270	Met	Glu
Phe	Gln	Tyr 275	Leu	Pro	Asp	Thr	Asp 280	Asp	Arg	His	Arg	Ile 285	Glu	Glu	Lys
Arg	Lys 290	Arg	Thr	Tyr	Glu	Thr 295	Phe	Lys	Ser	Ile	Met 300	Lys	Lys	Ser	Pro
Phe 305	Ser	Gly	Pro	Thr	Asp 310	Pro	Arg	Pro	Pro	Pro 315	Arg	Arg	Ile	Ala	Val 320
Pro	Ser	Arg	Ser	Ser 325	Ala	Ser	Val	Pro	Lys 330	Pro	Ala	Pro	Gln	Pro 335	Tyr
Pro	Phe	Thr	Ser 340	Ser	Leu	Ser	Thr	Ile 345	Asn	Tyr	Asp	Glu	Phe 350	Pro	Thr
Met	Val	Phe 355	Pro	Ser	Gly	Gln	Ile 360	Ser	Gln	Ala	Ser	Ala 365	Leu	Ala	Pro
Ala	Pro 370	Pro	Gln	Val	Leu	Pro 375	Gln	Ala	Pro	Ala	Pro 380	Ala	Pro	Ala	Pro
Ala 385	Met	Val	Ser	Ala	Leu 390	Ala	Gln	Ala	Pro	Ala 395	Pro	Val	Pro	Val	Leu 400
Ala	Pro	Gly	Pro	Pro 405	Gln	Ala	Val	Ala	Pro 410	Pro	Ala	Pro	Lys	Pro 415	Thr
Gln	Ala	Gly	Glu 420	Gly	Thr	Leu	Ser	Glu 425	Ala	Leu	Leu	Gln	Leu 430	Gln	Phe
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 465 470 475 480  
 Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Ala Gln Arg Pro  
 485 490 495  
 Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu Pro Asn Gly  
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 515 520 525  
 Ser Ala Leu Leu Ser Gln Ile Ser Ser  
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 <212> DNA  
 <213> homo sapiens

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 gggaccaggc cgtgatctct atgcccagat ctcaaccctc aactgtcacc ccaaggcact 180  
 tgggacgtcc tggacagacc gagtcccggg aagccccagc actgccgctg ccacactgct 240  
 ctgagcccaa atgggggagt gagaggccat agctgtctgg catgggcctc tccaccgtgc 300  
 ctgacctgct gctgccactg gtgtctctgg agctgttggg gggaatatac ccctcagggg 360  
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 <212> PRT  
 <213> homo sapiens

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 50 55 60  
 Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp  
 65 70 75 80  
 Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu  
 85 90 95  
 Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val  
 100 105 110  
 Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg  
 115 120 125  
 Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe  
 130 135 140  
 Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu  
 145 150 155 160  
 Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu  
 165 170 175  
 Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr  
 180 185 190  
 Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser  
 195 200 205  
 Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu  
 210 215 220  
 Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys  
 225 230 235 240  
 Ser Lys Leu Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu  
 245 250 255  
 Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser  
 260 265 270  
 Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val  
 275 280 285  
 Pro Ser Ser Thr Phe Thr Ser Ser Ser Thr Tyr Thr Pro Gly Asp Cys  
 290 295 300  
 Pro Asn Phe Ala Ala Pro Arg Arg Glu Val Ala Pro Pro Tyr Gln Gly  
 305 310 315 320  
 Ala Asp Pro Ile Leu Ala Thr Ala Leu Ala Ser Asp Pro Ile Pro Asn  
 325 330 335  
 Pro Leu Gln Lys Trp Glu Asp Ser Ala His Lys Pro Gln Ser Leu Asp  
 340 345 350  
 Thr Asp Asp Pro Ala Thr Leu Tyr Ala Val Val Glu Asn Val Pro Pro  
 355 360 365  
 Leu Arg Trp Lys Glu Phe Val Arg Arg Leu Gly Leu Ser Asp His Glu  
 370 375 380  
 Ile Asp Arg Leu Glu Leu Gln Asn Gly Arg Cys Leu Arg Glu Ala Gln  
 385 390 395 400  
 Tyr Ser Met Leu Ala Thr Trp Arg Arg Arg Thr Pro Arg Arg Glu Ala  
 405 410 415  
 Thr Leu Glu Leu Leu Gly Arg Val Leu Arg Asp Met Asp Leu Leu Gly  
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 Cys Leu Glu Asp Ile Glu Glu Ala Leu Cys Gly Pro Ala Ala Leu Pro  
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 Pro Ala Pro Ser Leu Leu Arg  
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 <211> 1735  
 <212> DNA  
 <213> homo sapiens

<400> 82  
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 ctacagccccg cggacgcatg tccccttgcc gagttgaggg cagctggcct agagcctgtg 180  
 ggacactatg aagaggtgga gctgactgag accagcgtga acgttggccc agagcgcac 240

## 33178SEQLIST.TXT

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cagggtgcgaa aggtgcaagg caccaacttg ggcaaaatat atgccatgaa agtcctaagg 360
aaggccaaaa ttgtgcgcaa tgccaaggac acagcacaca cacgggctga gcggaacatt 420
ctagagtcag tgaagcacc ctttattgtg gaactggcct atgccttcca gactgggtggc 480
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gtatgaaagt gtgtgtctgc tggggcagct gtgcccctga atcatgggca cggagggccg 1680
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<210> 83  
 <211> 495  
 <212> PRT  
 <213> homo sapiens

<400> 83

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35      40      45
Ala Ala Gly Leu Glu Pro Val Gly His Tyr Glu Glu Val Glu Leu Thr
50      55      60
Glu Thr Ser Val Asn Val Gly Pro Glu Arg Ile Gly Pro His Cys Phe
65      70      75      80
Glu Leu Leu Arg Val Leu Gly Lys Gly Gly Tyr Gly Lys Val Phe Gln
85      90      95
Val Arg Lys Val Gln Gly Thr Asn Leu Gly Lys Ile Tyr Ala Met Lys
100     105     110
Val Leu Arg Lys Ala Lys Ile Val Arg Asn Ala Lys Asp Thr Ala His
115     120     125
Thr Arg Ala Glu Arg Asn Ile Leu Glu Ser Val Lys His Pro Phe Ile
130     135     140
Val Glu Leu Ala Tyr Ala Phe Gln Thr Gly Gly Lys Leu Tyr Leu Ile
145     150     155     160
Leu Glu Cys Leu Ser Gly Gly Glu Leu Phe Thr His Leu Glu Arg Glu
165     170     175
Gly Ile Phe Leu Glu Asp Thr Ala Cys Phe Tyr Leu Ala Glu Ile Thr
180     185     190
Leu Ala Leu Gly His Leu His Ser Gln Gly Ile Ile Tyr Arg Asp Leu
195     200     205
Lys Pro Glu Asn Ile Met Leu Ser Ser Gln Gly His Ile Lys Leu Thr
210     215     220
Asp Phe Gly Leu Cys Lys Glu Ser Ile His Glu Gly Ala Val Thr His
225     230     235     240
Thr Phe Cys Gly Thr Ile Glu Tyr Met Ala Pro Glu Ile Leu Val Arg
245     250     255
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 Pro Ser Gln Arg Ile Gly Gly Gly Pro Gly Asp Ala Ala Asp Val Gln  
 325 330 335  
 Arg His Pro Phe Arg His Met Asn Trp Asp Asp Leu Leu Ala Trp  
 340 345 350  
 Arg Val Asp Pro Pro Phe Arg Pro Cys Leu Gln Ser Glu Glu Asp Val  
 355 360 365  
 Ser Gln Phe Asp Thr Arg Phe Thr Arg Gln Thr Pro Val Asp Ser Pro  
 370 375 380  
 Asp Asp Thr Ala Leu Ser Glu Ser Ala Asn Gln Ala Phe Leu Gly Phe  
 385 390 395 400  
 Thr Tyr Val Ala Pro Ser Val Leu Asp Ser Ile Lys Glu Gly Phe Ser  
 405 410 415  
 Phe Gln Pro Lys Leu Arg Ser Pro Arg Arg Leu Asn Ser Ser Pro Arg  
 420 425 430  
 Val Pro Val Ser Pro Leu Lys Phe Ser Pro Phe Glu Gly Phe Arg Pro  
 435 440 445  
 Ser Pro Ser Leu Pro Glu Pro Thr Glu Leu Pro Leu Pro Pro Leu Leu  
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 Pro Pro Pro Pro Pro Ser Thr Thr Ala Pro Leu Pro Ile Arg Pro Pro  
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 <211> 2169  
 <212> DNA  
 <213> homo sapiens

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 ggcggcgggc cttcgggagg cggccctggg ggctcgggca gggcgcgagc tagctcgttc 180  
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 gcatgaaaa 2169

<210> 85  
 <211> 483  
 <212> PRT  
 <213> homo sapiens

<400> 85  
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 35 40 45  
 Gly Lys Ala Ser Val Gly Ala Met Gly Gly Gly Val Gly Ala Ser Ser  
 50 55 60  
 Ser Gly Gly Gly Pro Gly Gly Ser Gly Gly Gly Ser Gly Gly Pro  
 65 70 75  
 Gly Ala Gly Thr Ser Phe Pro Pro Pro Gly Val Lys Leu Gly Arg Asp  
 80 85 90 95  
 Ser Gly Lys Val Thr Thr Val Val Ala Thr Leu Gly Gln Gly Pro Glu  
 100 105 110  
 Arg Ser Gln Glu Val Ala Tyr Thr Asp Ile Lys Val Ile Gly Asn Gly  
 115 120 125  
 Ser Phe Gly Val Val Tyr Gln Ala Arg Leu Ala Glu Thr Arg Glu Leu  
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 Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg Glu  
 145 150 155 160  
 Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu Arg  
 165 170 175  
 Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Leu Tyr Leu Asn  
 180 185 190  
 Leu Val Leu Glu Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg His  
 195 200 205  
 Phe Thr Lys Ala Lys Leu Thr Ile Pro Ile Leu Tyr Val Lys Val Tyr  
 210 215 220  
 Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Gln Gly Val  
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 Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Val Asp Pro Asp Thr  
 245 250 255  
 Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val Arg  
 260 265 270  
 Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala Pro  
 275 280 285  
 Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val Trp  
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 Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile Phe  
 305 310 315 320  
 Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val Leu  
 325 330 335  
 Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr Thr  
 340 345 350  
 Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val Phe  
 355 360 365  
 Lys Ser Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Ser Leu Leu  
 370 375 380  
 Glu Tyr Thr Pro Ser Ser Arg Leu Ser Pro Leu Glu Ala Cys Ala His  
 385 390 395 400  
 Ser Phe Phe Asp Glu Leu Arg Cys Leu Gly Thr Gln Leu Pro Asn Asn  
 405 410 415  
 Arg Pro Leu Pro Pro Leu Phe Asn Phe Ser Ala Gly Glu Leu Ser Ile  
 420 425 430  
 Gln Pro Ser Leu Asn Ala Ile Leu Ile Pro Pro His Leu Arg Ser Pro  
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 Ser Gly Thr Thr Thr Leu Thr Pro Ser Ser Gln Ala Leu Thr Glu Thr  
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 Asn Ser Ser

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 <211> 1689  
 <212> DNA  
 <213> homo sapiens

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 <211> 225  
 <212> PRT  
 <213> homo sapiens

<400> 87  
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 Asp Pro Gly Pro Gly Pro Ser Ile Gln Lys Thr Tyr Asp Leu Thr Arg  
 35 40 45  
 Tyr Leu Glu His Gln Leu Arg Ser Leu Ala Gly Thr Tyr Leu Asn Tyr  
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 65 70 75 80  
 Ala Glu Thr Leu Pro Arg Ala Thr Val Asp Leu Glu Val Trp Arg Ser  
 85 90 95  
 Leu Asn Asp Lys Leu Arg Leu Thr Gln Asn Tyr Glu Ala Tyr Ser His  
 100 105 110  
 Leu Leu Cys Tyr Leu Arg Gly Leu Asn Arg Gln Ala Ala Thr Ala Glu  
 115 120 125  
 Leu Arg Arg Ser Leu Ala His Phe Cys Thr Ser Leu Gln Gly Leu Leu  
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 Gly Ser Ile Ala Gly Val Met Ala Ala Leu Gly Tyr Pro Leu Pro Gln  
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 Phe  
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 <211> 459  
 <212> PRT  
 <213> homo sapiens

<400> 89  
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 Ala Gln His Glu Asp Gly Arg Asp Ser Glu Ala Cys Arg Gln Arg Phe  
 35 40 45  
 Arg Gln Phe Cys Tyr Gly Asp Val His Gly Pro His Glu Ala Phe Ser  
 50 55 60  
 Gln Leu Trp Glu Leu Cys Cys Arg Trp Leu Arg Pro Glu Leu Arg Thr  
 65 70 75 80  
 Lys Glu Gln Ile Leu Glu Leu Leu Val Leu Glu Gln Phe Leu Thr Val  
 85 90 95  
 Leu Pro Gly Glu Ile Gln Gly Trp Val Arg Glu Gln His Pro Gly Ser  
 100 105 110  
 Gly Glu Glu Ala Val Ala Leu Val Glu Asp Leu Gln Lys Gln Pro Val  
 115 120 125  
 Lys Ala Trp Arg Gln Asp Val Pro Ser Glu Glu Ala Glu Pro Glu Ala  
 130 135 140  
 Ala Gly Arg Gly Ser Gln Ala Thr Gly Pro Pro Pro Thr Val Gly Ala  
 145 150 155 160  
 Arg Arg Arg Pro Ser Val Pro Gln Glu Gln His Ser His Ser Ala Gln  
 165 170 175  
 Pro Pro Ala Leu Leu Lys Glu Gly Arg Pro Gly Glu Thr Thr Asp Thr  
 180 185 190  
 Cys Phe Val Ser Gly Val His Gly Pro Val Ala Leu Gly Asp Ile Pro  
 195 200 205  
 Phe Tyr Phe Ser Arg Glu Glu Trp Gly Thr Leu Asp Pro Ala Gln Arg  
 210 215 220  
 Asp Leu Phe Trp Asp Ile Lys Arg Glu Asn Ser Arg Asn Thr Thr Leu  
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 Gly Phe Gly Leu Lys Gly Gln Ser Glu Lys Ser Leu Leu Gln Glu Met  
 245 250 255  
 Val Pro Val Val Pro Gly Gln Thr Gly Ser Asp Val Thr Val Ser Trp  
 260 265 270  
 Ser Pro Glu Glu Ala Glu Ala Trp Glu Ser Glu Asn Arg Pro Arg Ala  
 275 280 285  
 Ala Leu Gly Pro Val Val Gly Ala Arg Arg Gly Arg Pro Pro Thr Arg  
 290 295 300  
 Arg Arg Gln Phe Arg Asp Leu Ala Ala Glu Lys Pro His Ser Cys Gly  
 305 310 315 320  
 Gln Cys Gly Lys Arg Phe Arg Trp Gly Ser Asp Leu Ala Arg His Gln  
 325 330 335  
 Arg Thr His Thr Gly Glu Lys Pro His Lys Cys Pro Glu Cys Asp Lys  
 340 345 350  
 Ser Phe Arg Ser Ser Ser Asp Leu Val Arg His Gln Gly Val His Thr  
 355 360 365  
 Gly Glu Lys Pro Phe Ser Cys Ser Glu Cys Gly Lys Ser Phe Ser Arg  
 370 375 380  
 Ser Ala Tyr Leu Ala Asp His Gln Arg Ile His Thr Gly Glu Lys Pro  
 385 390 395 400  
 Phe Gly Cys Ser Asp Cys Gly Lys Ser Phe Ser Leu Arg Ser Tyr Leu  
 405 410 415  
 Leu Asp His Arg Arg Val His Thr Gly Glu Arg Pro Phe Gly Cys Gly  
 420 425 430  
 Glu Cys Asp Lys Ser Phe Lys Gln Arg Ala His Leu Ile Ala His Gln  
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 Ser Leu His Ala Lys Met Ala Gln Pro Val Gly  
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 <212> DNA  
 <213> homo sapiens

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 ccagccccgc ggcggggcag ccgaggagc cctggctgtg gtcggggggc agtgggccat 180  
 gctgggggca gtggaaggcc ccagggtgaa gcaggcgag gacattagag acatctacga 240  
 cttccgagat gttctgggca cgggggcctt ctggagggtg atcctggcag aagataagag 300  
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 <211> 370  
 <212> PRT  
 <213> homo sapiens

<400> 91  
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 Glu Val Ile Leu Ala Glu Asp Lys Arg Thr Gln Lys Leu Val Ala Ile  
 35 40 45  
 Lys Cys Ile Ala Lys Glu Ala Leu Glu Gly Lys Glu Gly Ser Met Glu  
 50 55 60  
 Asn Glu Ile Ala Val Leu His Lys Ile Lys His Pro Asn Ile Val Ala  
 65 70 75 80  
 Leu Asp Asp Ile Tyr Glu Ser Gly Gly His Leu Tyr Leu Ile Met Gln  
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 Leu Val Ser Gly Gly Glu Leu Phe Asp Arg Ile Val Glu Lys Gly Phe  
 100 105 110  
 Tyr Thr Glu Arg Asp Ala Ser Arg Leu Ile Phe Gln Val Leu Asp Ala  
 115 120 125  
 Val Lys Tyr Leu His Asp Leu Gly Ile Val His Arg Asp Leu Lys Pro  
 130 135 140  
 Glu Asn Leu Leu Tyr Tyr Ser Leu Asp Glu Asp Ser Lys Ile Met Ile  
 145 150 155 160  
 Ser Asp Phe Gly Leu Ser Lys Met Glu Asp Pro Gly Ser Val Leu Ser  
 165 170 175  
 Thr Ala Cys Gly Thr Pro Gly Tyr Val Ala Pro Glu Val Leu Ala Gln  
 180 185 190  
 Lys Pro Tyr Ser Lys Ala Val Asp Cys Trp Ser Ile Gly Val Ile Ala  
 195 200 205  
 Tyr Ile Leu Leu Cys Gly Tyr Pro Pro Phe Tyr Asp Glu Asn Asp Ala  
 210 215 220

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Lys Leu Phe Glu Gln Ile Leu Lys Ala Glu Tyr Glu Phe Asp Ser Pro  
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 Tyr Trp Asp Asp Ile Ser Asp Ser Ala Lys Asp Phe Ile Arg His Leu  
 245 250 255  
 Met Glu Lys Asp Pro Glu Lys Arg Phe Thr Cys Glu Gln Ala Leu Gln  
 260 265 270  
 His Pro Trp Ile Ala Gly Asp Thr Ala Leu Asp Lys Asn Ile His Gln  
 275 280 285  
 Ser Val Ser Glu Gln Ile Lys Lys Asn Phe Ala Lys Ser Lys Trp Lys  
 290 295 300  
 Gln Ala Phe Asn Ala Thr Ala Val Val Arg His Met Arg Lys Leu Gln  
 305 310 315  
 Leu Gly Thr Ser Gln Glu Gly Gln Gly Gln Thr Ala Ser His Gly Glu  
 325 330 335  
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 <211> 2590  
 <212> DNA  
 <213> homo sapiens

<400> 92  
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 ggctgaggca agctaactgc ttgaaccag aaggcagagg ttgcagtga ctgagatcac 2520  
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 aaaaaaaaaa 2590

<210> 93  
 <211> 302  
 <212> PRT  
 <213> homo sapiens

<400> 93  
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 Leu Pro Ser Ser Glu Asp Asp Asp Asp Asp Ser Ser Ser Glu  
 35 40 45  
 Glu Lys Glu Thr Asp Asn Thr Lys Pro Asn Arg Met Pro Val Ala Pro  
 50 55 60  
 Tyr Trp Thr Ser Pro Glu Lys Met Glu Lys Lys Leu His Ala Val Pro  
 65 70 75 80  
 Ala Ala Lys Thr Val Lys Phe Lys Cys Pro Ser Ser Gly Thr Pro Asn  
 85 90 95  
 Pro Thr Leu Arg Trp Leu Lys Asn Gly Lys Glu Phe Lys Pro Asp His  
 100 105 110  
 Arg Ile Gly Gly Tyr Lys Val Arg Tyr Ala Thr Trp Ser Ile Ile Met  
 115 120 125  
 Asp Ser Val Val Pro Ser Asp Lys Gly Asn Tyr Thr Cys Ile Val Glu  
 130 135 140  
 Asn Glu Tyr Gly Ser Ile Asn His Thr Tyr Gln Leu Asp Val Val Glu  
 145 150 155 160  
 Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Lys  
 165 170 175  
 Thr Val Ala Leu Gly Ser Asn Val Glu Phe Met Cys Lys Val Tyr Ser  
 180 185 190  
 Asp Pro Gln Pro His Ile Gln Trp Leu Lys His Ile Glu Val Asn Gly  
 195 200 205  
 Ser Lys Ile Gly Pro Asp Asn Leu Pro Tyr Val Gln Ile Leu Lys Val  
 210 215 220  
 Ile Met Ala Pro Val Phe Val Gly Gln Ser Thr Gly Lys Glu Thr Thr  
 225 230 235 240  
 Val Ser Gly Ala Gln Val Pro Val Gly Arg Leu Ser Cys Pro Arg Met  
 245 250 255  
 Gly Ser Phe Leu Thr Leu Gln Ala His Thr Leu His Leu Ser Arg Asp  
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 <212> DNA  
 <213> homo sapiens

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 gtcctgattg ggatgacaag gattgggatt atggaaaatg gaggagcagc agcagtcata 240  
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## 33178SEQLIST.TXT

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## 33178SEQLIST.TXT

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 385 390 395 400  
 His Met Ile Gln Lys Thr Arg Lys Arg Lys Tyr Phe His His Asp Arg  
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 420 425 430  
 Cys Lys Pro Leu Lys Glu Phe Met Leu Ser Gln Asp Val Glu His Glu  
 435 440 445  
 Arg Leu Phe Asp Leu Ile Gln Lys Met Leu Glu Tyr Asp Pro Ala Lys  
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2352

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 <212> PRT  
 <213> homo sapiens

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 20      25      30
Leu Ala Glu Val Gln Asp Ser Ser Met Pro Val Pro Ala Gln Pro Lys
 35      40      45
Ala Gly Gly Ser Gly Ser Tyr Trp Pro Ala Arg His Ser Gly Ala Arg
 50      55      60
Val Ile Leu Leu Val Leu Tyr Arg Glu His Leu Asn Pro Asn Gly His
 65      70      75      80
His Phe Leu Thr Lys Glu Glu Leu Leu Gln Arg Cys Ala Gln Lys Ser
 85      90      95
Pro Arg Val Ala Pro Gly Ser Ala Pro Trp Pro Ala Leu Arg Ser
 100      105      110
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Ser Leu Thr Pro Glu Gly Leu Glu Leu Ala Gln Lys Leu Ala Glu Ser
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Glu Gly Leu Ser Leu Leu Asn Val Gly Ile Gly Pro Lys Glu Pro Pro
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Gly Glu Glu Thr Ala Val Pro Gly Ala Ala Ser Ala Glu Leu Ala Ser
 165      170      175
Glu Ala Gly Val Gln Gln Gln Pro Leu Glu Leu Arg Pro Gly Glu Tyr
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 195      200      205
Arg Pro Glu Leu Leu Arg Glu Leu Gln Arg Leu His Val Thr His Thr
 210      215      220
Val Arg Lys Leu His Val Gly Asp Phe Val Trp Val Ala Gln Glu Thr
 225      230      235      240
Asn Pro Arg Asp Pro Ala Asn Pro Gly Glu Leu Val Leu Asp His Ile
 245      250      255
Val Glu Arg Lys Arg Leu Asp Asp Leu Cys Ser Ser Ile Ile Asp Gly
 260      265      270
Arg Phe Arg Glu Gln Lys Phe Arg Leu Lys Arg Cys Gly Leu Glu Arg
 275      280      285
Arg Val Tyr Leu Val Glu Glu His Gly Ser Val His Asn Leu Ser Leu
 290      295      300
Pro Glu Ser Thr Leu Leu Gln Ala Val Thr Asn Thr Gln Val Ile Asp
 305      310      315      320
Gly Phe Phe Val Lys Arg Thr Ala Asp Ile Lys Glu Ser Ala Ala Tyr
 325      330      335
Leu Ala Leu Leu Thr Arg Gly Leu Gln Arg Leu Tyr Gln Gly His Thr
 340      345      350
Leu Arg Ser Arg Pro Trp Gly Thr Pro Gly Asn Pro Glu Ser Gly Ala
 355      360      365
Met Thr Ser Pro Asn Pro Leu Cys Ser Leu Leu Thr Phe Ser Asp Phe
 370      375      380
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 385      390      395      400
Ala Arg Gln Leu Met Gln Val Arg Gly Val Ser Gly Glu Lys Ala Ala
 405      410      415
Ala Leu Val Asp Arg Tyr Ser Thr Pro Ala Ser Leu Leu Ala Ala Tyr
 420      425      430
Asp Ala Cys Ala Thr Pro Lys Glu Gln Glu Thr Leu Leu Ser Thr Ile
 435      440      445
Lys Cys Gly Arg Leu Gln Arg Asn Leu Gly Pro Ala Leu Ser Arg Thr
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 <212> DNA  
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35      40      45
Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
50      55      60
Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
65      70      75      80
Met Arg Cys Gly Gly Cys Ser Asn Asp Glu Gly Leu Glu Cys Val Pro
85      90      95
Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
100     105     110
Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
115     120     125
Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Pro Cys Gly
130     135     140
Pro Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr
145     150     155     160
Cys Lys Cys Ser Cys Lys Asn Thr His Ser Arg Cys Lys Ala Arg Gln
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 <213> homo sapiens

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<210> 101  
 <211> 207  
 <212> PRT  
 <213> homo sapiens

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<400> 101
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20      25      30

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## 33178SEQLIST.TXT

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 50 55 60  
 His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp Gly  
 65 70 75 80  
 Asp Lys Tyr Ala Gln Leu Leu Val Glu Thr Asp Thr Phe Gly Ser Gln  
 85 90 95  
 Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn Arg  
 100 105 110  
 Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys Val  
 115 120 125  
 Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser Ala  
 130 135 140  
 Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro Arg  
 145 150 155 160  
 Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met Lys  
 165 170 175  
 Arg Tyr Pro Lys Gly Gln Pro Glu Leu Gln Lys Pro Phe Lys Tyr Thr  
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&lt;210&gt; 103

&lt;211&gt; 777

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 103

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Ile Lys Lys Lys Val Asn Asp Lys Asn Pro His Val Ala Leu Tyr Ala
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Leu Glu Val Met Glu Ser Val Val Lys Asn Cys Gly Gln Thr Val His
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Val Asp Ala Glu Glu Cys His Arg Cys Arg Val Gln Phe Gly Val Met
165      170      175
Thr Arg Lys His His Cys Arg Ala Cys Gly Gln Ile Phe Cys Gly Lys
180      185      190
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225      230      235
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Tyr Pro Lys Ala Glu Pro Met Pro Ser Ala Ser Ser Ala Pro Pro Ala
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Ser Ser Leu Tyr Ser Ser Pro Val Asn Ser Ser Ala Pro Leu Ala Glu
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Asp Ile Asp Pro Glu Leu Ala Arg Tyr Leu Asn Arg Asn Tyr Trp Glu
325      330      335
Lys Lys Gln Glu Ala Arg Lys Ser Pro Thr Pro Ser Ala Pro Val
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Pro Leu Thr Glu Pro Ala Ala Gln Pro Gly Glu Gly His Ala Ala Pro
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 Leu Tyr Tyr Glu Gly Leu Gln Asp Lys Leu Ala Gln Ile Arg Asp Ala  
 465 470 475 480  
 Arg Gly Ala Leu Ser Ala Leu Arg Glu Glu His Arg Glu Lys Leu Arg  
 485 490 495  
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 <212> PRT  
 <213> homo sapiens

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 35 40 45  
 Leu His Ile His Thr Pro Leu Leu Asp Ser Glu Arg Lys Asp Val Leu  
 50 55 60  
 Arg Glu Ala Glu Ile Leu His Lys Ala Arg Phe Ser Tyr Ile Leu Pro  
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## 33178SEQLIST.TXT

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 130 135 140  
 His Asp Leu Lys Thr Gln Asn Ile Leu Leu Asp Asn Glu Phe His Val  
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 Gln Ser Arg Ser Lys Ser Ala Pro Glu Gly Gly Thr Ile Ile Tyr  
 180 185 190  
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## 33178SEQLIST.TXT

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 <213> homo sapiens

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Gly Thr Ile Leu Asn Tyr Leu Arg Asp Asp Thr Ile Thr Leu Pro Gln		
85	90	95
Asn Arg Gln Glu Ile Lys Glu Leu Met Ala Glu Ala Lys Tyr Tyr Leu		
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Ile Gln Gly Leu Val Asn Met Cys Gln Ser Ala Leu Gln Asp Lys Lys		
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Asp Ser Tyr Gln Pro Val Cys Asn Ile Pro Ile Ile Thr Ser Leu Lys		
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Glu Glu Glu Arg Leu Ile Glu Ser Ser Thr Lys Pro Val Val Lys Leu		
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Leu Tyr Asn Arg Ser Asn Asn Lys Tyr Ser Tyr Thr Ser Asn Ser Asp		
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## 425

Page 73

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## 33178SEQLIST.TXT

aatgcaaattc ctatgtgatt ttaactctgt cttcacctga ttcaactaaa aaaaaaaaaag 2580  
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<210> 114  
 <211> 537  
 <212> PRT  
 <213> homo sapiens

<400> 114  
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 35 40 45  
 Asn Tyr Asn Asn Phe His Ala Ala Gly Gly Gln Gly Leu Thr Val Phe  
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 Gly Gly Val Asn Ser Ser Ser His Thr Gly Thr Leu Arg Thr Arg Gly  
 65 70 75 80  
 Gly Thr Gly Val Thr Leu Phe Val Ala Leu Tyr Asp Tyr Glu Ala Arg  
 85 90 95  
 Thr Glu Asp Asp Leu Ser Phe His Lys Gly Glu Lys Phe Gln Ile Leu  
 100 105 110  
 Asn Ser Ser Glu Gly Asp Trp Trp Glu Ala Arg Ser Leu Thr Thr Gly  
 115 120 125  
 Glu Thr Gly Tyr Ile Pro Ser Asn Tyr Val Ala Pro Val Asp Ser Ile  
 130 135 140  
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 145 150 155 160  
 Arg Gln Leu Leu Ser Phe Gly Asn Pro Arg Gly Thr Phe Leu Ile Arg  
 165 170 175  
 Glu Ser Glu Thr Thr Lys Gly Ala Tyr Ser Leu Ser Ile Arg Asp Trp  
 180 185 190  
 Asp Asp Met Lys Gly Asp His Val Lys His Tyr Lys Ile Arg Lys Leu  
 195 200 205  
 Asp Asn Gly Gly Tyr Tyr Ile Thr Thr Arg Ala Gln Phe Glu Thr Leu  
 210 215 220  
 Gln Gln Leu Val Gln His Tyr Ser Glu Arg Ala Ala Gly Leu Cys Cys  
 225 230 235 240  
 Arg Leu Val Val Pro Cys His Lys Gly Met Pro Arg Leu Thr Asp Leu  
 245 250 255  
 Ser Val Lys Thr Lys Asp Val Trp Glu Ile Pro Arg Glu Ser Leu Gln  
 260 265 270  
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 Thr Met Ser Pro Glu Ser Phe Leu Glu Glu Ala Gln Ile Met Lys Lys  
 305 310 315 320  
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 325 330 335  
 Pro Ile Tyr Ile Val Thr Glu Tyr Met Asn Lys Gly Ser Leu Leu Asp  
 340 345 350  
 Phe Leu Lys Asp Gly Glu Gly Arg Ala Leu Lys Leu Pro Asn Leu Val  
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 Asp Met Ala Ala Gln Val Ala Ala Gly Met Ala Tyr Ile Glu Arg Met  
 370 375 380  
 Asn Tyr Ile His Arg Asp Leu Arg Ser Ala Asn Ile Leu Val Gly Asn  
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 Gly Leu Ile Cys Lys Ile Ala Asp Phe Gly Leu Ala Arg Leu Ile Glu  
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 Asp Asn Glu Tyr Thr Ala Arg Gln Gly Ala Lys Phe Pro Ile Lys Trp  
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 Val Trp Ser Phe Gly Ile Leu Leu Thr Glu Leu Val Thr Lys Gly Arg  
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## 33178SEQLIST.TXT

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 Glu Leu Met Ile His Cys Trp Lys Lys Asp Pro Glu Glu Arg Pro Thr  
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 Pro Gln Tyr Gln Pro Gly Glu Asn Leu  
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<210> 115  
 <211> 2357  
 <212> DNA  
 <213> homo sapiens

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 <211> 155  
 <212> PRT  
 <213> homo sapiens

<400> 116  
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   50   55   60
Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu
   65   70   75   80
Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu
   85   90   95
Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr
  100  105  110
Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys
  115  120  125
Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala
  130  135  140
Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
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<210> 117  
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 <212> DNA  
 <213> homo sapiens

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ccctccctgt cagggcgtaa ttgagtcaaa ggcaggatca gggtcccgcc ctccaggtcc 180
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aagagaccag tgagtcattc gtccagaagg cggggagagc agcagcggcc caagcaggag 300
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caaaaacaa                                     1029

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<210> 118  
 <211> 168  
 <212> PRT  
 <213> homo sapiens

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<400> 118
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  20  25  30
Gly Lys Lys Glu Lys Pro Glu Lys Lys Val Lys Lys Ser Asp Cys Gly
  35  40  45
Glu Trp Gln Trp Ser Val Cys Val Pro Thr Ser Gly Asp Cys Gly Leu
  50  55  60
Gly Thr Arg Glu Gly Thr Arg Thr Gly Ala Glu Cys Lys Gln Thr Met
  65  70  75  80
Lys Thr Gln Arg Cys Lys Ile Pro Cys Asn Trp Lys Lys Gln Phe Gly
  85  90  95
Ala Glu Cys Lys Tyr Gln Phe Gln Ala Trp Gly Glu Cys Asp Leu Asn
 100 105 110
Thr Ala Leu Lys Thr Arg Thr Gly Ser Leu Lys Arg Ala Leu His Asn
 115 120 125
Ala Glu Cys Gln Lys Thr Val Thr Ile Ser Lys Pro Cys Gly Lys Leu
 130 135 140

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## 33178SEQLIST.TXT

Thr Lys Pro Lys Pro Gln Ala Glu Ser Lys Lys Lys Lys Lys Glu Gly  
 145 150 155 160  
 Lys Lys Gln Glu Lys Met Leu Asp  
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<210> 119  
 <211> 1350  
 <212> DNA  
 <213> homo sapiens

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 accatgggct ggctgcactg ggagcgcttc atgtgcaacc ttgactgcca ggaagagcca 240  
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 tcctgtgagt ggctcttcta tatgtggccc tttcaaaagc ccaattatac agaaatccga 720  
 cagtactgca atcactggcg aaattttgct gacattgatg attcctggaa aagtataaag 780  
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<210> 120  
 <211> 429  
 <212> PRT  
 <213> homo sapiens

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 Asp Asn Gly Leu Ala Arg Thr Pro Thr Met Gly Trp Leu His Trp Glu  
 35 40 45  
 Arg Phe Met Cys Asn Leu Asp Cys Gln Glu Glu Pro Asp Ser Cys Ile  
 50 55 60  
 Ser Glu Lys Leu Phe Met Glu Met Ala Glu Leu Met Val Ser Glu Gly  
 65 70 75 80  
 Trp Lys Asp Ala Gly Tyr Glu Tyr Leu Cys Ile Asp Asp Cys Trp Met  
 85 90 95  
 Ala Pro Gln Arg Asp Ser Glu Gly Arg Leu Gln Ala Asp Pro Gln Arg  
 100 105 110  
 Phe Pro His Gly Ile Arg Gln Leu Ala Asn Tyr Val His Ser Lys Gly  
 115 120 125  
 Leu Lys Leu Gly Ile Tyr Ala Asp Val Gly Asn Lys Thr Cys Ala Gly  
 130 135 140  
 Phe Pro Gly Ser Phe Gly Tyr Tyr Asp Ile Asp Ala Gln Thr Phe Ala  
 145 150 155 160  
 Asp Trp Gly Val Asp Leu Leu Lys Phe Asp Gly Cys Tyr Cys Asp Ser  
 165 170 175  
 Leu Glu Asn Leu Ala Asp Gly Tyr Lys His Met Ser Leu Ala Leu Asn  
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## 33178SEQLIST.TXT

Trp Pro Phe Gln Lys Pro Asn Tyr Thr Glu Ile Arg Gln Tyr Cys Asn  
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 His Trp Arg Asn Phe Ala Asp Ile Asp Asp Ser Trp Lys Ser Ile Lys  
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 Ser Ile Leu Asp Trp Thr Ser Phe Asn Gln Glu Arg Ile Val Asp Val  
 245 250 255  
 Ala Gly Pro Gly Gly Trp Asn Asp Pro Asp Met Leu Val Ile Gly Asn  
 260 265 270  
 Phe Gly Leu Ser Trp Asn Gln Gln Val Thr Gln Met Ala Leu Trp Ala  
 275 280 285  
 Ile Met Ala Ala Pro Leu Phe Met Ser Asn Asp Leu Arg His Ile Ser  
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 Gln Asp Pro Leu Gly Lys Gln Gly Tyr Gln Leu Arg Gln Gly Asp Asn  
 325 330 335  
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 Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala Cys Phe Ile  
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 Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu Trp Thr  
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<210> 121  
 <211> 287  
 <212> DNA  
 <213> homo sapiens

<400> 121  
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 aacaagatct ccctaatact atgaacgcgg cagagataac ggacaagctc ggcctccatt 180  
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<210> 122  
 <211> 91  
 <212> PRT  
 <213> homo sapiens

<400> 122  
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 Val Phe Ala Asn Lys Gln Asp Leu Pro Asn Thr Met Asn Ala Ala Glu  
 35 40 45  
 Ile Thr Asp Lys Leu Gly Leu His Ser Leu Arg Tyr Arg Asn Trp His  
 50 55 60  
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<210> 123  
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 <212> DNA  
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<400> 123

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&lt;210&gt; 124

&lt;211&gt; 718

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 124

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Val Leu Leu Gly Leu Ile Ala Thr Gly Met Phe Gln Phe Trp Pro His
 35      40      45
Ser Ile Glu Ser Ser Asn Asp Trp Asn Val Glu Lys Arg Ser Ile Arg
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Asp Val Pro Val Val Arg Leu Pro Ala Asp Ser Pro Ile Pro Glu Arg
 65      70      75      80
Gly Asp Leu Ser Cys Arg Met His Thr Cys Phe Asp Val Tyr Arg Cys
 85      90      95
Gly Phe Asn Pro Lys Asn Lys Ile Lys Val Tyr Ile Tyr Ala Leu Lys
100      105      110
Lys Tyr Val Asp Asp Phe Gly Val Ser Val Ser Asn Thr Ile Ser Arg
115      120      125
Glu Tyr Asn Glu Leu Leu Met Ala Ile Ser Asp Ser Asp Tyr Tyr Thr
130      135      140
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Asn Gln Asn Thr Leu Arg Ile Lys Glu Thr Ala Gln Ala Met Ala Gln
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180      185      190
Pro Gly Gly Pro Pro Asp Tyr Asn Thr Ala Leu Asp Val Pro Arg Asp
195      200      205
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210      215      220
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225      230      235      240
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Gln Val Lys His Gly Glu Ser Val Leu Val Leu Asp Lys Cys Thr Asn
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355      360      365
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370      375      380
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435      440      445
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465      470      475      480
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	Val	Leu	Thr	580	Gly	Ala	Ala	Phe	585	Tyr	His	Lys	590	Tyr	Phe	Asn	Tyr	Leu
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	Asn	Cys	Glu	Asp	Ile	Ala	Met	615	Asn	Phe	Leu	Val	620	Ala	Asn	Val	Thr	Gly
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 <211> 478

<212> PRT  
 <213> homo sapiens

<400> 126

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 35      40      45
Ser Ala Ala Gly Glu Gln Glu Pro Asp Lys Glu Ser Gly Ala Ser Val
 50      55      60
Asp Glu Val Ala Arg Gln Leu Glu Arg Ser Ala Leu Glu Asp Lys Glu
 65      70      75
Arg Asp Glu Asp Asp Glu Asp Gly Asp Gly Asp Gly Asp Gly Ala Thr
 85      90      95
Gly Lys Lys Lys Lys Lys Lys Lys Lys Arg Gly Pro Lys Val Gln
100      105      110
Thr Asp Pro Pro Ser Val Pro Ile Cys Asp Leu Tyr Pro Asn Gly Val
115      120      125
Phe Pro Lys Gly Gln Glu Cys Glu Tyr Pro Pro Thr Gln Asp Gly Arg
130      135      140
Thr Ala Ala Trp Arg Thr Thr Ser Glu Glu Lys Lys Ala Leu Asp Gln
145      150      155
Ala Ser Glu Glu Ile Trp Asn Asp Phe Arg Glu Ala Ala Glu Ala His
165      170      175
Arg Gln Val Arg Lys Tyr Val Met Ser Trp Ile Lys Pro Gly Met Thr
180      185      190
Met Ile Glu Ile Cys Glu Lys Leu Glu Asp Cys Ser Arg Lys Leu Ile
195      200      205
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210      215      220
Leu Asn Asn Cys Ala Ala His Tyr Thr Pro Asn Ala Gly Asp Thr Thr
225      230      235
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245      250      255
Ser Gly Arg Ile Ile Asp Cys Ala Phe Thr Val Thr Phe Asn Pro Lys
260      265      270
Tyr Asp Thr Leu Leu Lys Ala Val Lys Asp Ala Thr Asn Thr Gly Ile
275      280      285
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290      295      300
Gln Glu Val Met Glu Ser Tyr Glu Val Glu Ile Asp Gly Lys Thr Tyr
305      310      315
Gln Val Lys Pro Ile Arg Asn Leu Asn Gly His Ser Ile Gly Gln Tyr
325      330      335
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340      345      350
Thr Arg Met Glu Glu Gly Glu Val Tyr Ala Ile Glu Thr Phe Gly Ser
355      360      365
Thr Gly Lys Gly Val Val His Asp Asp Met Glu Cys Ser His Tyr Met
370      375      380
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385      390      395
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405      410      415
Arg Arg Trp Leu Asp Arg Leu Gly Glu Ser Lys Tyr Leu Met Ala Leu
420      425      430
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<212> DNA  
 <213> homo sapiens

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65      70      75      80
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 Cys Arg Leu Gln Lys Cys Phe Glu Val Gly Met Ser Lys Glu Ala Val  
 145 150 155 160  
 Arg Asn Asp Arg Asn Lys Lys Lys Lys Glu Val Lys Glu Glu Gly Ser  
 165 170 175  
 Pro Asp Ser Tyr Glu Leu Ser Pro Gln Leu Glu Glu Leu Ile Thr Lys  
 180 185 190  
 Val Ser Lys Ala His Gln Glu Thr Phe Pro Ser Leu Cys Gln Leu Gly  
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 Lys Tyr Thr Thr Asn Ser Ser Ala Asp His Arg Val Gln Leu Asp Leu

## 33178SEQLIST.TXT

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	260	265
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Ser Asp Gly Leu Thr Leu Asn Arg Thr Gln Met His Asn Ala Gly Phe		
	290	295
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305	310	315
Leu Glu Met Asp Asp Thr Glu Thr Gly Leu Leu Ser Ala Ile Cys Leu		
	325	330
Ile Cys Gly Asp Arg Met Asp Leu Glu Pro Glu Lys Val Asp Lys		
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Leu Gln Glu Pro Leu Leu Glu Ala Leu Arg Leu Tyr Ala Arg Arg Arg		
	355	360
Arg Pro Ser Gln Pro Tyr Met Phe Pro Arg Met Leu Met Lys Ile Thr		
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Asp Leu Arg Gly Ile Ser Thr Lys Gly Ala Glu Arg Ala Ile Thr Leu		
385	390	395
Lys Met Glu Ile Pro Gly Pro Met Pro Pro Leu Ile Arg Glu Met Leu		
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Glu Asn Pro Glu Met Phe Glu Asp Asp Ser Ser Gln Pro Gly Pro His		
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 <212> PRT  
 <213> homo sapiens

<400> 132  
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## 33178SEQLIST.TXT

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Leu	Thr	Ser	Pro	Asn	Thr	Glu	Ser	Ile	Phe	Val	Glu	Asp	Pro	Tyr	Thr
Ala	Ser	Leu	Arg	Ser	Glu	Ile	Glu	Ser	Asp	Gly	His	Glu	Phe	Glu	Ala
Glu	Ser	Trp	Ser	Leu	Ala	Val	Asp	Ala	Ala	Tyr	Ala	Lys	Lys	Gln	Lys
Arg	Glu	Val	Val	Lys	Arg	Gln	Asp	Val	Leu	Tyr	Glu	Leu	Met	Gln	Thr
Glu	Val	His	His	Val	Arg	Thr	Leu	Lys	Ile	Met	Leu	Lys	Val	Tyr	Ser
Arg	Ala	Leu	Gln	Glu	Glu	Leu	Gln	Phe	Ser	Ser	Lys	Ala	Ile	Gly	Arg
Leu	Phe	Pro	Cys	Ala	Asp	Asp	Leu	Leu	Glu	Thr	His	Ser	His	Phe	Leu
Ala	Arg	Leu	Lys	Glu	Arg	Arg	Gln	Glu	Ser	Leu	Glu	Glu	Gly	Ser	Asp
Arg	Asn	Tyr	Val	Ile	Gln	Lys	Ile	Gly	Asp	Leu	Leu	Val	Gln	Gln	Phe
Ser	Gly	Glu	Asn	Gly	Glu	Arg	Met	Lys	Glu	Lys	Tyr	Gly	Val	Phe	Cys
Ser	Gly	His	Asn	Glu	Ala	Val	Ser	His	Tyr	Lys	Leu	Leu	Leu	Gln	Gln
Asn	Lys	Lys	Phe	Gln	Asn	Leu	Ile	Lys	Lys	Ile	Gly	Asn	Phe	Ser	Ile
Val	Arg	Arg	Leu	Gly	Val	Gln	Glu	Cys	Ile	Leu	Leu	Val	Thr	Gln	Arg
Ile	Thr	Lys	Tyr	Pro	Val	Leu	Val	Glu	Arg	Ile	Ile	Gln	Asn	Thr	Glu
Ala	Gly	Thr	Glu	Asp	Tyr	Glu	Asp	Leu	Thr	Gln	Ala	Leu	Asn	Leu	Ile
Lys	Asp	Ile	Ile	Ser	Gln	Val	Asp	Ala	Lys	Val	Ser	Glu	Cys	Glu	Lys
Gly	Gln	Arg	Leu	Arg	Glu	Ile	Ala	Gly	Lys	Met	Asp	Leu	Lys	Ser	Ser
Ser	Lys	Leu	Lys	Asn	Gly	Leu	Thr	Phe	Arg	Lys	Glu	Asp	Met	Leu	Gln
Arg	Gln	Leu	His	Leu	Glu	Gly	Met	Leu	Cys	Trp	Lys	Thr	Thr	Ser	Gly
Arg	Leu	Lys	Asp	Ile	Leu	Ala	Ile	Leu	Leu	Thr	Asp	Val	Val	Leu	Leu
Leu	Gln	Glu	Lys	Asp	Gln	Lys	Tyr	Val	Phe	Ala	Ser	Val	Asp	Ser	Lys
Pro	Pro	Val	Ile	Ser	Leu	Gln	Lys	Leu	Ile	Val	Arg	Glu	Val	Ala	Asn
Glu	Glu	Lys	Ala	Met	Phe	Leu	Ile	Ser	Ala	Ser	Leu	Gln	Gly	Pro	Glu
Met	Tyr	Glu	Ile	Tyr	Thr	Ser	Ser	Lys	Glu	Asp	Arg	Asn	Ala	Trp	Met
Ala	His	Ile	Gln	Arg	Ala	Val	Glu	Ser	Cys	Pro	Asp	Glu	Glu	Glu	Gly
Pro	Phe	Ser	Leu	Pro	Glu	Glu	Glu	Arg	Lys	Val	Val	Glu	Ala	Arg	Ala
Thr	Arg	Leu	Arg	Asp	Phe	Gln	Glu	Arg	Leu	Ser	Met	Lys	Asp	Gln	Leu
Ile	Ala	Gln	Ser	Leu	Glu	Lys	Gln	Gln	Ile	Tyr	Leu	Glu	Met	Ala	Ala
Glu	Met	Gly	Gly	Leu	Glu	Asp	Leu	Pro	Gln	Pro	Arg	Gly	Leu	Phe	Arg
Gly	Gly	Asp	Pro	Ser	Glu	Thr	Leu	Gln	Gly	Glu	Leu	Ile	Leu	Lys	Ser
Ala	Met	Ser	Glu	Ile	Glu	Gly	Ile	Gln	Ser	Leu	Ile	Cys	Arg	Arg	Leu
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## 33178SEQLIST.TXT

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 595 600 605  
 Asp Ser Asp Ile Pro Gly Ser Ser Glu Glu Ser Pro Gln Val Val Glu  
 610 615 620  
 Ala Pro Gly Thr Glu Ser Asp Pro Arg Leu Pro Thr Val Leu Glu Ser  
 625 630 635 640  
 Glu Leu Val Gln Arg Ile Gln Thr Leu Ser Gln Leu Leu Leu Asn Leu  
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 Ala Ile Gln Glu Arg Glu Lys Gln Phe Arg Leu Gln Ser Thr Arg Gly  
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 740 745 750  
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 Ala Tyr Gln His Asp Leu Glu Arg Leu Arg Glu Ala Gln Arg Ala Val  
 770 775 780  
 Glu Arg Glu Arg Glu Arg Leu Glu Leu Leu Arg Arg Leu Lys Lys Gln  
 785 790 795 800  
 Asn Thr Ala Pro Gly Ala Leu Pro Pro Asp Thr Leu Ala Glu Ala Gln  
 805 810 815  
 Pro Pro Ser His Pro Pro Ser Phe Asn Gly Glu Gly Leu Glu Gly Pro  
 820 825 830  
 Arg Val Ser Met Leu Pro Ser Gly Val Gly Pro Glu Tyr Ala Glu Arg  
 835 840 845  
 Pro Glu Val Ala Arg Arg Asp Ser Ala Pro Thr Glu Ser Arg Leu Ala  
 850 855 860  
 Lys Ser Asp Val Pro Ile Gln Leu Leu Ser Ala Thr Asn Gln Phe Gln  
 865 870 875 880  
 Arg Gln Ala Ala Val Gln Gln Gln Ile Pro Thr Lys Leu Ala Ala Ser  
 885 890 895  
 Thr Lys Gly Gly Lys Asp Lys Gly Gly Lys Ser Arg Gly Ser Gln Arg  
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 Trp Glu Ser Ser Ala Ser Phe Asp Leu Lys Gln Gln Leu Leu Leu Asn  
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 Lys Leu Met Gly Lys Asp Glu Ser Thr Ser Arg Asn Arg Arg Ser Leu  
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 Ser Pro Ile Leu Pro Gly Arg His Ser Pro Ala Pro Pro Pro Asp Pro  
 945 950 955 960  
 Gly Phe Pro Ala Pro Ser Pro Pro Pro Ala Asp Ser Pro Ser Glu Gly  
 965 970 975  
 Phe Ser Leu Lys Ala Gly Gly Thr Ala Leu Leu Pro Gly Pro Pro Ala  
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## 33178SEQLIST.TXT

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 <213> homo sapiens

<400> 134

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Ala Tyr Gln Trp Cys Arg Glu Tyr Leu Gly Gly Ala Trp Arg Arg Val
          50          55          60
Gln Pro Glu Glu Leu Arg Val Tyr Pro Val Ser Gly Gly Leu Ser Asn
65          70          75          80
Leu Leu Phe Arg Cys Ser Leu Pro Asp His Leu Pro Ser Val Gly Glu
          85          90          95
Glu Pro Arg Glu Val Leu Leu Arg Leu Tyr Gly Ala Ile Leu Gln Gly
          100          105          110
Val Asp Ser Leu Val Leu Glu Ser Val Met Phe Ala Ile Leu Ala Glu
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225          230          235          240
Asn Asp Ile Gln Glu Gly Asn Ile Leu Leu Leu Ser Glu Pro Glu Asn
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## 33178SEQLIST.TXT

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325 330 335
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340 345 350
Trp Gly Leu Trp Ser Ile Leu Gln Ala Ser Met Ser Thr Ile Glu Phe
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<210> 136
<211> 339
<212> PRT
<213> homo sapiens

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Lys Gly Val Asp Glu Val Thr Ile Val Asn Ile Leu Thr Asn Arg Ser
50 55 60
Asn Ala Gln Arg Gln Asp Ile Ala Phe Ala Tyr Gln Arg Arg Thr Lys
65 70 75 80
Lys Glu Leu Ala Ser Ala Leu Lys Ser Ala Leu Ser Gly His Leu Glu
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Thr Val Ile Leu Gly Leu Leu Lys Thr Pro Ala Gln Tyr Asp Ala Ser
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 Gly Arg Arg Ala Glu Asp Gly Ser Val Ile Asp Tyr Glu Leu Ile Asp  
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 Gln Asp Ala Arg Asp Leu Tyr Asp Ala Gly Val Lys Arg Lys Gly Thr  
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 Asp Val Pro Lys Trp Ile Ser Ile Met Thr Glu Arg Ser Val Pro His  
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 Leu Gln Lys Val Phe Asp Arg Tyr Lys Ser Tyr Ser Pro Tyr Asp Met  
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 Ser Glu Phe Lys Arg Lys Tyr Gly Lys Ser Leu Tyr Tyr Tyr Ile Gln  
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 <212> DNA  
 <213> homo sapiens

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<212> PRT  
<213> homo sapiens

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Leu His His Tyr Phe Val Pro Asp Gly Asp Tyr Glu Glu Asn Asp Asp  
35 40 45  
Pro Glu Lys Cys Gln Leu Leu Phe Arg Val Ser Asp His Arg Arg Cys  
50 55 60  
Ser Gln Gly Glu Gly Ser Gln Val Gly Ser Leu Leu Ser Leu Thr Leu  
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Arg Glu Glu Phe Thr Val Leu Gly Arg Gln Val Glu Asp Ala Gly Arg  
85 90 95  
Val Leu Glu Gly Ile Ser Lys Ser Ile Ser Tyr Asp Leu Asp Gly Glu  
100 105 110  
Glu Ser Tyr Gly Lys Tyr Leu Arg Arg Glu Ser His Gln Ile Gly Asp  
115 120 125  
Ala Tyr Ser Asn Ser Asp Lys Ser Leu Thr Glu Leu Glu Ser Lys Phe  
130 135 140  
Lys Gln Gly Gln Glu Gln Asp Ser Arg Gln Glu Ser Arg Leu Asn Glu  
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Asp Phe Leu Gly Met Leu Val His Thr Arg Ser Leu Leu Lys Glu Thr  
165 170 175  
Leu Asp Ile Ser Val Gly Leu Arg Asp Lys Tyr Glu Leu Leu Ala Leu  
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&lt;210&gt; 140

&lt;211&gt; 412

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 140

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35 40 45
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Val Pro Tyr Gln Val Leu Ala Leu Tyr Asn Ser Thr Arg Glu Leu Leu
65 70 75 80
Glu Glu Met His Gly Glu Arg Glu Glu Gly Cys Thr Gln Glu Asn Thr
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Glu Ser Glu Tyr Tyr Ala Lys Glu Ile His Lys Phe Asp Met Ile Gln
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Gly Leu Ala Glu His Asn Glu Leu Ala Val Cys Pro Lys Gly Ile Thr
115 120 125
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145 150 155 160
Ser Lys Arg Asn Glu Gln Arg Ile Glu Leu Phe Gln Ile Leu Arg Pro
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Asp Glu His Ile Ala Lys Gln Arg Tyr Ile Gly Gly Lys Asn Leu Pro
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Thr Arg Gly Thr Ala Glu Trp Leu Ser Phe Asp Val Thr Asp Thr Val
195 200 205
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Asp Asp His Gly Arg Gly Asp Leu Gly Arg Leu Lys Lys Gln Lys Asp
260 265 270
His His Asn Pro His Leu Ile Leu Met Met Ile Pro Pro His Arg Leu
275 280 285
Asp Asn Pro Gly Gln Gly Gly Gln Arg Lys Lys Arg Ala Leu Asp Thr
290 295 300
Asn Tyr Cys Phe Arg Asn Leu Glu Glu Asn Cys Cys Val Arg Pro Leu
305 310 315 320
Tyr Ile Asp Phe Arg Gln Asp Leu Gly Trp Lys Trp Val His Glu Pro

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Asn	Pro	Glu	Ala	Ser	Ala	Ser	Pro	Cys	Cys	Val	Pro	Gln	Asp	Leu	Glu
Pro	Leu	Thr	Ile	Leu	Tyr	Tyr	Val	Gly	Arg	Thr	Pro	Lys	Val	Glu	Gln
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 <212> PRT  
 <213> homo sapiens

<400> 142

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Gly Asp Arg Val Glu Val Leu Ser Arg Asp Ala Ile Ser Gly Asp
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Glu Gly Trp Trp Ala Gly Gln Val Gly Gly Gln Val Gly Ile Phe Pro
85 90 95
Ser Asn Tyr Val Ser Arg Gly Gly Gly Pro Pro Pro Cys Glu Val Ala
100 105 110
Ser Phe Gln Glu Leu Arg Leu Glu Glu Val Ile Gly Ile Gly Gly Phe
115 120 125
Gly Lys Val Tyr Arg Gly Ser Trp Arg Gly Glu Leu Val Ala Val Lys
130 135 140
Ala Ala Arg Gln Asp Pro Asp Glu Asp Ile Ser Val Thr Ala Glu Ser
145 150 155 160
Val Arg Gln Glu Ala Arg Leu Phe Ala Met Leu Ala His Pro Asn Ile
165 170 175
Ile Ala Leu Lys Ala Val Cys Leu Glu Glu Pro Asn Leu Cys Leu Val
180 185 190
Met Glu Tyr Ala Ala Gly Gly Pro Leu Ser Arg Ala Leu Ala Gly Arg
195 200 205
Arg Val Pro Pro His Val Leu Val Asn Trp Ala Val Gln Ile Ala Arg
210 215 220
Gly Met His Tyr Leu His Cys Glu Ala Leu Val Pro Val Ile His Arg
225 230 235 240
Asp Leu Lys Ser Asn Ile Leu Leu Leu Gln Pro Ile Glu Ser Asp
245 250 255
Asp Met Glu His Lys Thr Leu Lys Ile Thr Asp Phe Gly Leu Ala Arg
260 265 270
Glu Trp His Lys Thr Thr Gln Met Ser Ala Ala Gly Thr Tyr Ala Trp
275 280 285
Met Ala Pro Glu Val Ile Lys Ala Ser Thr Phe Ser Lys Gly Ser Asp
290 295 300
Val Trp Ser Phe Gly Val Leu Leu Trp Glu Leu Leu Thr Gly Glu Val
305 310 315 320
Pro Tyr Arg Gly Ile Asp Cys Leu Ala Val Ala Tyr Gly Val Ala Val
325 330 335
Asn Lys Leu Thr Leu Pro Ile Pro Ser Thr Cys Pro Glu Pro Phe Ala
340 345 350
Gln Leu Met Ala Asp Cys Trp Ala Gln Asp Pro His Arg Arg Pro Asp
355 360 365
Phe Ala Ser Ile Leu Gln Gln Leu Glu Ala Leu Glu Ala Gln Val Leu
370 375 380
Arg Glu Met Pro Arg Asp Ser Phe His Ser Met Gln Glu Gly Trp Lys

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## 33178SEQLIST.TXT

385 Arg Glu Ile Gln Gly 390 Leu Phe Asp Glu 395 Leu Arg Ala Lys Glu 400 Lys Glu  
 405 Glu Glu Glu Leu Thr Arg Ala Ala Arg Glu 415 Gln Arg  
 420 Ser Gln Ala Glu Gln Leu Arg Arg Glu His Leu Leu Ala Gln Trp  
 435 Glu Leu Glu Val Phe Glu Arg Glu Leu Thr Leu Leu Gln Gln Val  
 450 Asp Arg Glu Arg Pro His Val Arg Arg Arg Arg Gly Thr Phe Lys Arg  
 465 Ser Lys Leu Arg Ala Arg Asp Gly Gly Glu Arg Ile Ser Met Pro Leu  
 485 Asp Phe Lys His Arg Ile Thr Val Gln Ala Ser Pro Gly Leu Asp Arg  
 500 Arg Arg Asn Val Phe Glu Val Gly Pro Gly Asp Ser Pro Thr Phe Pro  
 515 Arg Phe Arg Ala Ile Gln Leu Glu Pro Ala Glu Pro Gly Gln Ala Trp  
 530 Gly Arg Gln Ser Pro Arg Arg Leu Glu Asp Ser Ser Asn Gly Glu Arg  
 545 Arg Ala Cys Trp Ala Trp Gly Pro Ser Ser Pro Lys Pro Gly Glu Ala  
 565 Gln Asn Gly Arg Arg Arg Ser Arg Met Asp Glu Ala Thr Trp Tyr Leu  
 580 Asp Ser Asp Asp Ser Ser Pro Leu Gly Ser Pro Ser Thr Pro Pro Ala  
 595 Leu Asn Gly Asn Pro Pro Arg Pro Ser Leu Glu Pro Glu Glu Pro Lys  
 610 Arg Pro Val Pro Ala Glu Arg Gly Ser Ser Ser Gly Thr Pro Lys Leu  
 625 Ile Gln Arg Ala Leu Leu Arg Gly Thr Ala Leu Leu Ala Ser Leu Gly  
 645 Leu Gly Arg Asp Leu Gln Pro Pro Gly Gly Pro Gly Arg Glu Arg Gly  
 660 Glu Ser Pro Thr Thr Pro Pro Thr Pro Thr Pro Ala Pro Cys Pro Thr  
 675 Glu Pro Pro Pro Ser Pro Leu Ile Cys Phe Ser Leu Lys Thr Pro Asp  
 690 Ser Pro Pro Thr Pro Ala Pro Leu Leu Leu Asp Leu Gly Ile Pro Val  
 705 Gly Gln Arg Ser Ala Lys Ser Pro Arg Arg Glu Glu Pro Arg Gly  
 725 Gly Thr Val Ser Pro Pro Pro Gly Thr Ser Arg Ser Ala Pro Gly Thr  
 740 Pro Gly Thr Pro Arg Ser Pro Pro Leu Gly Leu Ile Ser Arg Pro Arg  
 755 Pro Ser Pro Leu Arg Ser Arg Ile Asp Pro Trp Ser Phe Val Ser Ala  
 770 Gly Pro Arg Pro Ser Pro Leu Pro Ser Pro Gln Pro Ala Pro Arg Arg  
 785 Ala Pro Trp Thr Leu Phe Pro Asp Ser Asp Pro Phe Trp Asp Ser Pro  
 805 Pro Ala Asn Pro Phe Gln Gly Gly Pro Gln Asp Cys Arg Ala Gln Thr  
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 835 840 845

<210> 143  
 <211> 1571  
 <212> DNA  
 <213> homo sapiens

<400> 143  
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 gagctgcccc actggggccgc cgccaaagag ttttaccaga agtacgacc taaggacgtc 180



## 33178SEQLIST.TXT

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accagggtcca tcatgcggtc tctgctggaa gcagttagct ttctccatgc caacaacatt 540
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accccgagg atctagcgcc agagatcctt aaatgctcca tggatgaaac ccaccaggc 720
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aaccacaggg attcccagga agcagaactc tccagaagaa gggttttgat cattccagct 1380
cctctgggct ctggcctcag gccactaat gatcctgcta ccctcttgaa gaccagcccg 1440
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acacgccagg g 1571

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<210> 144  
 <211> 406  
 <212> PRT  
 <213> homo sapiens

<400> 144

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Ala	Lys	Glu	Phe	Tyr	Gln	Lys	Tyr	Asp	Pro	Lys	Asp	Val	Ile	Gly	Arg
			20					25					30		
Gly	Val	Ser	Ser	Val	Val	Arg	Arg	Cys	Val	His	Arg	Ala	Thr	Gly	His
		35					40					45			
Glu	Phe	Ala	Val	Lys	Ile	Met	Glu	Val	Thr	Ala	Glu	Arg	Leu	Ser	Pro
	50					55					60				
Glu	Gln	Leu	Glu	Glu	Val	Arg	Glu	Ala	Thr	Arg	Arg	Glu	Thr	His	Ile
65					70					75				80	
Leu	Arg	Gln	Val	Ala	Gly	His	Pro	His	Ile	Ile	Thr	Leu	Ile	Asp	Ser
			85						90					95	
Tyr	Glu	Ser	Ser	Ser	Phe	Met	Phe	Leu	Val	Phe	Asp	Leu	Met	Arg	Lys
			100					105					110		
Gly	Glu	Leu	Phe	Asp	Tyr	Leu	Thr	Glu	Lys	Val	Ala	Leu	Ser	Glu	Lys
		115					120					125			
Glu	Thr	Arg	Ser	Ile	Met	Arg	Ser	Leu	Leu	Glu	Ala	Val	Ser	Phe	Leu
	130					135					140				
His	Ala	Asn	Asn	Ile	Val	His	Arg	Asp	Leu	Lys	Pro	Glu	Asn	Ile	Leu
145					150					155					160
Leu	Asp	Asp	Asn	Met	Gln	Ile	Arg	Leu	Ser	Asp	Phe	Gly	Phe	Ser	Cys
			165						170					175	
His	Leu	Glu	Pro	Gly	Glu	Lys	Leu	Arg	Glu	Leu	Cys	Gly	Thr	Pro	Gly
			180					185					190		
Tyr	Leu	Ala	Pro	Glu	Ile	Leu	Lys	Cys	Ser	Met	Asp	Glu	Thr	His	Pro
		195					200					205			
Gly	Tyr	Gly	Lys	Glu	Val	Asp	Leu	Trp	Ala	Cys	Gly	Val	Ile	Leu	Phe
	210					215					220				
Thr	Leu	Leu	Ala	Gly	Ser	Pro	Pro	Phe	Trp	His	Arg	Arg	Gln	Ile	Leu
225					230					235					240
Met	Leu	Arg	Met	Ile	Met	Glu	Gly	Gln	Tyr	Gln	Phe	Ser	Ser	Pro	Glu
			245						250					255	
Trp	Asp	Asp	Arg	Ser	Ser	Thr	Val	Lys	Asp	Leu	Ile	Ser	Arg	Leu	Leu
			260					265					270		
Gln	Val	Asp	Pro	Glu	Ala	Arg	Leu	Thr	Ala	Glu	Gln	Ala	Leu	Gln	His
		275					280					285			
Pro	Phe	Phe	Glu	Arg	Cys	Glu	Gly	Ser	Gln	Pro	Trp	Asn	Leu	Thr	Pro

## 33178SEQLIST.TXT

290 295 300  
 Arg Gln Arg Phe Arg Val Ala Val Trp Thr Val Leu Ala Ala Gly Arg  
 305 310 315 320  
 Val Ala Leu Ser Thr His Arg Val Arg Pro Leu Thr Lys Asn Ala Leu  
 325 330 335  
 Leu Arg Asp Pro Tyr Ala Leu Arg Ser Val Arg His Leu Ile Asp Asn  
 340 345 350  
 Cys Ala Phe Arg Leu Tyr Gly His Trp Val Lys Lys Gly Glu Gln Gln  
 355 360 365  
 Asn Arg Ala Ala Leu Phe Gln His Arg Pro Pro Gly Pro Phe Pro Ile  
 370 375 380  
 Met Gly Pro Glu Glu Glu Gly Asp Ser Ala Ala Ile Thr Glu Asp Glu  
 385 390 395 400  
 Ala Val Leu Val Leu Gly  
 405

<210> 145  
 <211> 952  
 <212> DNA  
 <213> homo sapiens

<400> 145  
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 gaatcaggct tcacctccaa ggacacctat ctaagccatt ttaaccctcg ggattacctt 180  
 gaaaaatatt acaagtttgg ttctaggcac tctgcagaaa gccagattct taagcacctt 240  
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 atcggctctg gccccactat ctatcagctc ctctctgctt gtgaatcctt taaggagatc 360  
 gtcgtcactg actactcaga ccagaacctg caggagctgg agaagtggct gaagaaagag 420  
 ccagaggcct ttgactggtc cccagtgggtg acctatgtgt gtgatcttga agggaacaga 480  
 gtcaagggtc cagagaagga ggagaagtgt agacaggcgg tcaagcaggt gctgaagtgt 540  
 gatgtgactc agagccagcc actggggggc gtccccttac ccccggtga ctgctgctc 600  
 agcacactgt gtctggatgc cgcctgcca gacctccca cctactgcag ggcgctcagg 660  
 aacctcggca gcctactgaa gccagggggc ttcctggatga tcatggatgc gctcaagagc 720  
 agctactaca tgattgggtga gcagaagtgc tccagcctcc ccctgggccc ggaggcagta 780  
 gaggtctctg tgaaagaggc tggctacaca atcgaatggt ttgaggtgat ctgcgaaagt 840  
 tattcttcca ccattggcca caacgaagga cttttctccc tgggtggcgag gaagctgagc 900  
 agaccctgtg gatgcctgtg acctcaatta aagcaattcc tttgacctgt ca 952

<210> 146  
 <211> 264  
 <212> PRT  
 <213> homo sapiens

<400> 146  
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 20 25 30  
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 35 40 45  
 Phe Cys Leu Asp Gly Val Lys Gly Asp Leu Leu Ile Asp Ile Gly Ser  
 50 55 60  
 Gly Pro Thr Ile Tyr Gln Leu Leu Ser Ala Cys Glu Ser Phe Lys Glu  
 65 70 75 80  
 Ile Val Val Thr Asp Tyr Ser Asp Gln Asn Leu Gln Glu Leu Glu Lys  
 85 90 95  
 Trp Leu Lys Lys Glu Pro Glu Ala Phe Asp Trp Ser Pro Val Val Thr  
 100 105 110  
 Tyr Val Cys Asp Leu Glu Gly Asn Arg Val Lys Gly Pro Glu Lys Glu  
 115 120 125  
 Glu Lys Leu Arg Gln Ala Val Lys Gln Val Leu Lys Cys Asp Val Thr  
 130 135 140  
 Gln Ser Gln Pro Leu Gly Ala Val Pro Leu Pro Pro Ala Asp Cys Val  
 145 150 155 160  
 Leu Ser Thr Leu Cys Leu Asp Ala Ala Cys Pro Asp Leu Pro Thr Tyr  
 165 170 175

## 33178SEQLIST.TXT

Cys Arg Ala Leu Arg Asn Leu Gly Ser Leu Leu Lys Pro Gly Gly Phe  
 180 185 190  
 Leu Val Ile Met Asp Ala Leu Lys Ser Ser Tyr Tyr Met Ile Gly Glu  
 195 200 205  
 Gln Lys Phe Ser Ser Leu Pro Leu Gly Arg Glu Ala Val Glu Ala Ala  
 210 215 220  
 Val Lys Glu Ala Gly Tyr Thr Ile Glu Trp Phe Glu Val Ile Ser Gln  
 225 230 235 240  
 Ser Tyr Ser Ser Thr Met Ala Asn Asn Glu Gly Leu Phe Ser Leu Val  
 245 250 255  
 Ala Arg Lys Leu Ser Arg Pro Leu  
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<210> 147  
 <211> 830  
 <212> DNA  
 <213> homo sapiens

<400> 147  
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 ccacgatgag atgttctccg acatctacaa gatccgggag atcgcgggac gggtgtgcct 180  
 ggaggtggag gggaagatgg tcagtaggac agaaggtacc attgatgact cgctcattgg 240  
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 gaagtacatc aaagattaca tgaaatcaat caaagggaaa cttgaagaac agagaccaga 420  
 aagagtaaaaa ccttttatga caggggctgc agaacaaatc aagcacatcc ttgctaattt 480  
 caaaaactac cagttcttta ttggtgaaaa catgaatcca gatggcatgg ttgctctatt 540  
 ggactaccgt gaggatgggtg tgaccccata tatgattttc ttaaggatg gtttagaaat 600  
 ggaaaaatgt taacaaatgt ggcaattatt ttggatctat cacctgtcat cataactggc 660  
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 gctcttcatt tattttgact gtgatttatt tggagtgagg gcattgtttt taagaaaaac 780  
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<210> 148  
 <211> 172  
 <212> PRT  
 <213> homo sapiens

<400> 148  
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 Gly Lys Met Val Ser Arg Thr Glu Gly Asn Ile Asp Asp Ser Leu Ile  
 35 40 45  
 Gly Gly Asn Ala Ser Ala Glu Gly Pro Glu Gly Glu Gly Thr Glu Ser  
 50 55 60  
 Thr Val Ile Thr Gly Val Asp Ile Val Met Asn His His Leu Gln Glu  
 65 70 75 80  
 Thr Ser Phe Thr Lys Glu Ala Tyr Lys Lys Tyr Ile Lys Asp Tyr Met  
 85 90 95  
 Lys Ser Ile Lys Gly Lys Leu Glu Glu Gln Arg Pro Glu Arg Val Lys  
 100 105 110  
 Pro Phe Met Thr Gly Ala Ala Glu Gln Ile Lys His Ile Leu Ala Asn  
 115 120 125  
 Phe Lys Asn Tyr Gln Phe Phe Ile Gly Glu Asn Met Asn Pro Asp Gly  
 130 135 140  
 Met Val Ala Leu Leu Asp Tyr Arg Glu Asp Gly Val Thr Pro Tyr Met  
 145 150 155 160  
 Ile Phe Phe Lys Asp Gly Leu Glu Met Glu Lys Cys  
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<210> 149  
 <211> 2077  
 <212> DNA

&lt;213&gt; homo sapiens

&lt;400&gt; 149

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catgcaaaaa atcattgttt ttaagataac aaaagtaggg aataaacaag ctgaaccac 2040
ttttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 2077

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&lt;210&gt; 150

&lt;211&gt; 502

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 150

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20      25      30
Glu Trp Met Leu Gln His Asp Leu Ile Pro Gly Asp Leu Arg Asp Leu
35      40      45
Arg Val Glu Pro Val Thr Thr Ser Val Ala Thr Gly Asp Tyr Ser Ile
50      55      60
Leu Met Asn Val Ser Trp Val Leu Arg Ala Asp Ala Ser Ile Arg Leu
65      70      75      80
Leu Lys Ala Thr Lys Ile Cys Val Thr Gly Lys Ser Asn Phe Gln Ser
85      90      95
Tyr Ser Cys Val Arg Cys Asn Tyr Thr Glu Ala Phe Gln Thr Gln Thr
100     105     110
Arg Pro Ser Gly Gly Lys Trp Thr Phe Ser Tyr Ile Gly Phe Pro Val
115     120     125
Glu Leu Asn Thr Val Tyr Phe Ile Gly Ala His Asn Ile Pro Asn Ala
130     135     140
Asn Met Asn Glu Asp Gly Pro Ser Met Ser Val Asn Phe Thr Ser Pro
145     150     155     160
Gly Cys Leu Asp His Ile Met Lys Tyr Lys Lys Lys Cys Val Lys Ala
165     170     175
Gly Ser Leu Trp Asp Pro Asn Ile Thr Ala Cys Lys Lys Asn Glu Glu

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## 33178SEQLIST.TXT

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		195					200					205			
Pro	His	Gln	Lys	Lys	Gln	Thr	Arg	Ala	Ser	Val	Val	Ile	Pro	Val	Thr
		210				215					220				240
Gly	Asp	Ser	Glu	Gly	Ala	Thr	Val	Gln	Leu	Thr	Pro	Tyr	Phe	Pro	Thr
				245					250					255	
Cys	Gly	Ser	Asp	Cys	Ile	Arg	His	Lys	Gly	Thr	Val	Val	Leu	Cys	Pro
			260					265					270		
Gln	Thr	Gly	Val	Pro	Phe	Pro	Leu	Asp	Asn	Asn	Lys	Ser	Lys	Pro	Gly
		275					280					285			
Gly	Trp	Leu	Pro	Leu	Leu	Leu	Leu	Ser	Leu	Leu	Val	Ala	Thr	Trp	Val
		290				295					300				
Leu	Val	Ala	Gly	Ile	Tyr	Leu	Met	Trp	Arg	His	Glu	Arg	Ile	Lys	Lys
		305			310					315					320
Thr	Ser	Phe	Ser	Thr	Thr	Thr	Leu	Leu	Pro	Pro	Ile	Lys	Val	Leu	Val
				325					330					335	
Val	Tyr	Pro	Ser	Glu	Ile	Cys	Phe	His	Thr	Ile	Cys	Tyr	Phe	Thr	
			340					345				350			
Glu	Phe	Leu	Gln	Asn	His	Cys	Arg	Ser	Glu	Val	Ile	Leu	Glu	Lys	Trp
		355					360					365			
Gln	Lys	Lys	Lys	Ile	Ala	Glu	Met	Gly	Pro	Val	Gln	Trp	Leu	Ala	Thr
		370				375					380				
Gln	Lys	Lys	Ala	Ala	Asp	Lys	Val	Val	Phe	Leu	Leu	Ser	Asn	Asp	Val
		385			390					395					400
Asn	Ser	Val	Cys	Asp	Gly	Thr	Cys	Gly	Lys	Ser	Glu	Gly	Ser	Pro	Ser
				405					410					415	
Glu	Asn	Ser	Gln	Asp	Leu	Phe	Pro	Leu	Ala	Phe	Asn	Leu	Phe	Cys	Ser
			420					425					430		
Asp	Leu	Arg	Ser	Gln	Ile	His	Leu	His	Lys	Tyr	Val	Val	Val	Tyr	Phe
		435					440					445			
Arg	Glu	Ile	Asp	Thr	Lys	Asp	Asp	Tyr	Asn	Ala	Leu	Ser	Val	Cys	Pro
		450				455					460				
Lys	Tyr	His	Leu	Met	Lys	Asp	Ala	Thr	Ala	Phe	Cys	Ala	Glu	Leu	Leu
		465			470					475					480
His	Val	Lys	Gln	Gln	Val	Ser	Ala	Gly	Lys	Arg	Ser	Gln	Ala	Cys	His
				485					490					495	
Asp	Gly	Cys	Cys	Ser	Leu										
			500												

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 <212> DNA  
 <213> homo sapiens

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 ggcccagggtg gcataagtgg aaataaactc aagctgatgc ttcaaaaacg agaagcacct 240  
 gttccaacta agactaaagt ggccgttgat gagaataaag ccaaagaatt ccttggcagc 300  
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 cttaacagag atcgaaatgg acatgaatac tatggcgatt actaccaacg tcactatgat 480  
 gaagactctg caattggtcc ccggagcccc tacggcttta ggcatggagc cagcgtcaac 540  
 tacgatgact actaaccatg acttgccaca cgctgtacaa gaagcaaata gcgattctct 600  
 tcatgtatct cctaattgct tacactactt ggtttctgat ttgctctatt tcagcagatc 660  
 tttctaccta ctttggtgat caaaaaagaa gagttaaaac aacacatgta aatgcctttt 720  
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 <211> 148  
 <212> PRT  
 <213> homo sapiens

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 Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val Pro Thr Lys  
 35 40 45  
 Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu Phe Leu Gly Ser  
 50 55 60  
 Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg Thr Arg Pro Glu Val  
 65 70 75 80  
 Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met Gly Phe Asp Glu Ala Lys  
 85 90 95  
 Phe Glu Asp Asp Ile Thr Tyr Trp Leu Asn Arg Asp Arg Asn Gly His  
 100 105 110  
 Glu Tyr Tyr Gly Asp Tyr Tyr Gln Arg His Tyr Asp Glu Asp Ser Ala  
 115 120 125  
 Ile Gly Pro Arg Ser Pro Tyr Gly Phe Arg His Gly Ala Ser Val Asn  
 130 135 140  
 Tyr Asp Asp Tyr  
 145

&lt;210&gt; 153

&lt;211&gt; 2526

&lt;212&gt; DNA

&lt;213&gt; homo sapiens

&lt;400&gt; 153

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 aaaaaaaaca aaaaacaact gaccagttgt tgataaccac taagagtctc tattaaaatt 2280  
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aaaaaa 2526

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<211> 705  
<212> PRT  
<213> homo sapiens

<400> 154  
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Leu Phe Pro Lys Pro Tyr Pro Asn Phe Glu Thr Thr Thr Val Ile  
35 40 45  
Thr Val Pro Thr Gly Tyr Arg Val Lys Leu Val Phe Gln Gln Phe Asp  
50 55 60  
Leu Glu Pro Ser Glu Gly Cys Phe Tyr Asp Tyr Val Lys Ile Ser Ala  
65 70 75 80  
Asp Lys Lys Ser Leu Gly Arg Phe Cys Gly Gln Leu Gly Ser Pro Leu  
85 90 95  
Gly Asn Pro Pro Gly Lys Lys Glu Phe Met Ser Gln Gly Asn Lys Met  
100 105 110  
Leu Leu Thr Phe His Thr Asp Phe Ser Asn Glu Glu Asn Gly Thr Ile  
115 120 125  
Met Phe Tyr Lys Gly Phe Leu Ala Tyr Tyr Gln Ala Val Asp Leu Asp  
130 135 140  
Glu Cys Ala Ser Arg Ser Lys Leu Gly Glu Glu Asp Pro Gln Pro Gln  
145 150 155 160  
Cys Gln His Leu Cys His Asn Tyr Val Gly Gly Tyr Phe Cys Ser Cys  
165 170 175  
Arg Pro Gly Tyr Glu Leu Gln Glu Asp Arg His Ser Cys Gln Ala Glu  
180 185 190  
Cys Ser Ser Glu Leu Tyr Thr Glu Ala Ser Gly Tyr Ile Ser Ser Leu  
195 200 205  
Glu Tyr Pro Arg Ser Tyr Pro Pro Asp Leu Arg Cys Asn Tyr Ser Ile  
210 215 220  
Arg Val Glu Arg Gly Leu Thr Leu His Leu Lys Phe Leu Glu Pro Phe  
225 230 235 240  
Asp Ile Asp Asp His Gln Gln Val His Cys Pro Tyr Asp Gln Leu Gln  
245 250 255  
Ile Tyr Ala Asn Gly Lys Asn Ile Gly Glu Phe Cys Gly Lys Gln Arg  
260 265 270  
Pro Pro Asp Leu Asp Thr Ser Ser Asn Ala Val Asp Leu Leu Phe Phe  
275 280 285  
Thr Asp Glu Ser Gly Asp Ser Arg Gly Trp Lys Leu Arg Tyr Thr Thr  
290 295 300  
Glu Ile Ile Lys Cys Pro Gln Pro Lys Thr Leu Asp Glu Phe Thr Ile  
305 310 315 320  
Ile Gln Asn Leu Gln Pro Gln Tyr Gln Phe Arg Asp Tyr Phe Ile Ala  
325 330 335  
Thr Cys Lys Gln Gly Tyr Gln Leu Ile Glu Gly Asn Gln Val Leu His  
340 345 350  
Ser Phe Thr Ala Val Cys Gln Asp Asp Gly Thr Trp His Arg Ala Met  
355 360 365  
Pro Arg Cys Lys Ile Lys Asp Cys Gly Gln Pro Arg Asn Leu Pro Asn  
370 375 380  
Gly Asp Phe Arg Tyr Thr Thr Met Gly Val Asn Thr Tyr Lys Ala  
385 390 395 400  
Arg Ile Gln Tyr Tyr Cys His Glu Pro Tyr Tyr Lys Met Gln Thr Arg  
405 410 415  
Ala Gly Ser Arg Glu Ser Glu Gln Gly Val Tyr Thr Cys Thr Ala Gln  
420 425 430  
Gly Ile Trp Lys Asn Glu Gln Lys Gly Glu Lys Ile Pro Arg Cys Leu  
435 440 445  
Pro Val Cys Gly Lys Pro Val Asn Pro Val Glu Gln Arg Gln Arg Ile

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 485 490 495  
 Ile Leu Thr Ala His Thr Leu Tyr Pro Lys Glu His Glu Ala Gln  
 500 505 510  
 Ser Asn Ala Ser Leu Asp Val Phe Leu Gly His Thr Asn Val Glu Glu  
 515 520 525  
 Leu Met Lys Leu Gly Asn His Pro Ile Arg Arg Val Ser Val His Pro  
 530 535 540  
 Asp Tyr Arg Gln Asp Glu Ser Tyr Asn Phe Glu Gly Asp Ile Ala Leu  
 545 550 555 560  
 Leu Glu Leu Glu Asn Ser Val Thr Leu Gly Pro Asn Leu Leu Pro Ile  
 565 570 575  
 Cys Leu Pro Asp Asn Asp Thr Phe Tyr Asp Leu Gly Leu Met Gly Tyr  
 580 585 590  
 Val Ser Gly Phe Gly Val Met Glu Glu Lys Ile Ala His Asp Leu Arg  
 595 600 605  
 Phe Val Arg Leu Pro Val Ala Asn Pro Gln Ala Cys Glu Asn Trp Leu  
 610 615 620  
 Arg Gly Lys Asn Arg Met Asp Val Phe Ser Gln Asn Met Phe Cys Ala  
 625 630 635 640  
 Gly His Pro Ser Leu Lys Gln Asp Ala Cys Gln Gly Asp Ser Gly Gly  
 645 650 655  
 Val Phe Ala Val Arg Asp Pro Asn Thr Asp Arg Trp Val Ala Thr Gly  
 660 665 670  
 Ile Val Ser Trp Gly Ile Gly Cys Ser Arg Gly Tyr Gly Phe Tyr Thr  
 675 680 685  
 Lys Val Leu Asn Tyr Val Asp Trp Ile Lys Lys Glu Met Glu Glu Glu  
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 Asp  
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 <212> DNA  
 <213> homo sapiens

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 actgaaccac ccaagggacc tggatttggt gtacaagcag gcctttaatt tatattgaac 780  
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 <212> PRT  
 <213> homo sapiens

<400> 156  
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 20 25 30  
 Gly Ala Gly Gly Ala Leu Phe Val His Arg Asp Thr Pro Glu Asn Asn  
 35 40 45



## 33178SEQLIST.TXT

Pro Asp Thr Pro Phe Asp Phe Thr Pro Glu Asn Tyr Lys Arg Ile Glu  
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 Pro Val Leu Asp Leu Ala Gln Arg Gln Asn Gly Trp Leu Pro Ile Ser  
 85 90 95  
 Ala Met Asn Lys Val Ala Glu Val Leu Gln Val Pro Pro Met Arg Val  
 100 105 110  
 Tyr Glu Val Ala Thr Phe Tyr Thr Met Tyr Asn Arg Lys Pro Val Gly  
 115 120 125  
 Lys Tyr His Ile Gln Val Cys Thr Thr Thr Pro Cys Met Leu Arg Asn  
 130 135 140  
 Ser Asp Ser Ile Leu Glu Ala Ile Gln Lys Lys Leu Gly Ile Lys Val  
 145 150 155 160  
 Gly Glu Thr Thr Pro Asp Lys Leu Phe Thr Leu Ile Glu Val Glu Cys  
 165 170 175  
 Leu Gly Ala Cys Val Asn Ala Pro Met Val Gln Ile Asn Asp Asn Tyr  
 180 185 190  
 Tyr Glu Asp Leu Thr Ala Lys Asp Ile Glu Glu Ile Ile Asp Glu Leu  
 195 200 205  
 Lys Ala Gly Lys Ile Pro Lys Pro Gly Pro Arg Ser Gly Arg Phe Ser  
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 <212> DNA  
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 35 40 45  
 Leu Ala Lys Gln Cys Gln Leu Trp Asp Leu Leu Ser Asp Leu Glu Ala  
 50 55 60  
 Lys Cys Glu Lys Val Ser Glu Phe Val Ala Ser Lys Pro Gly Thr Cys  
 65 70 75 80  
 Val Lys Val Leu Thr Ile Glu Pro Pro Pro Ala Asp Pro Arg Leu Arg  
 85 90 95  
 Glu Asp Met Ala Leu Leu Ala Asp Cys Ala Leu Pro Pro Glu Leu Arg  
 100 105 110  
 Gly Asp Leu Trp Glu Leu Pro Phe Pro Cys Pro Asp Gly Phe Asn Ser  
 115 120 125  
 Cys Pro Asp Ile Cys Phe Arg Val Ala Gly Cys Ser Phe Leu Cys His  
 130 135 140  
 Lys Ala Phe Phe Cys Gly Arg Ser Asp Tyr Phe Arg Ala Leu Leu Asp  
 145 150 155 160  
 Asp His Phe Arg Glu Ser Glu Glu Pro Ala Thr Ser Gly Gly Pro Pro  
 165 170 175  
 Ala Val Thr Leu His Gly Ile Ser Pro Asp Val Phe Thr His Val Leu  
 180 185 190  
 Tyr Tyr Met Tyr Ser Asp His Thr Glu Leu Ser Pro Glu Ala Ala Tyr  
 195 200 205  
 Asp Val Leu Ser Val Ala Asp Met Tyr Leu Leu Pro Gly Leu Lys Arg  
 210 215 220  
 Leu Cys Gly Arg Ser Leu Ala Gln Met Leu Asp Glu Asp Thr Val Val  
 225 230 235 240  
 Gly Val Trp Arg Val Ala Lys Leu Phe Arg Leu Ala Arg Leu Glu Asp  
 245 250 255  
 Gln Cys Thr Glu Tyr Met Ala Lys Val Ile Glu Lys Leu Val Glu Arg  
 260 265 270  
 Glu Asp Phe Val Glu Ala Val Lys Glu Glu Ala Ala Val Ala Ala  
 275 280 285  
 Arg Gln Glu Thr Asp Ser Ile Pro Leu Val Asp Asp Ile Arg Phe His  
 290 295 300  
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 <212> DNA  
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 <212> PRT  
 <213> homo sapiens

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## 33178SEQLIST.TXT

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Ile	His	Lys	Arg	Trp	Ala	Leu	Val	Trp	Leu	Ala	Cys	Leu	Leu	Phe	Ala	
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## 33178SEQLIST.TXT

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## 33178SEQLIST.TXT

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 Pro Thr Val Pro Asn Ser Ala Gln Glu Asp Ser Asp His Asp Gly Gln  
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 485 490 495  
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&lt;210&gt; 166

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&lt;210&gt; 167

&lt;211&gt; 1982

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&lt;400&gt; 167

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&lt;210&gt; 168

&lt;211&gt; 465

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 168

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 Ala Val Val Gln Asn Leu Asp Gln Leu Tyr Ile Pro Val Ser Glu Gln  
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## 33178SEQLIST.TXT

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